PION-04519

<R42-105-O>

Service Manual

STEREO TAPE DECK

T-6600/F
T-6100/F

PIONEER

<70J02E31T>

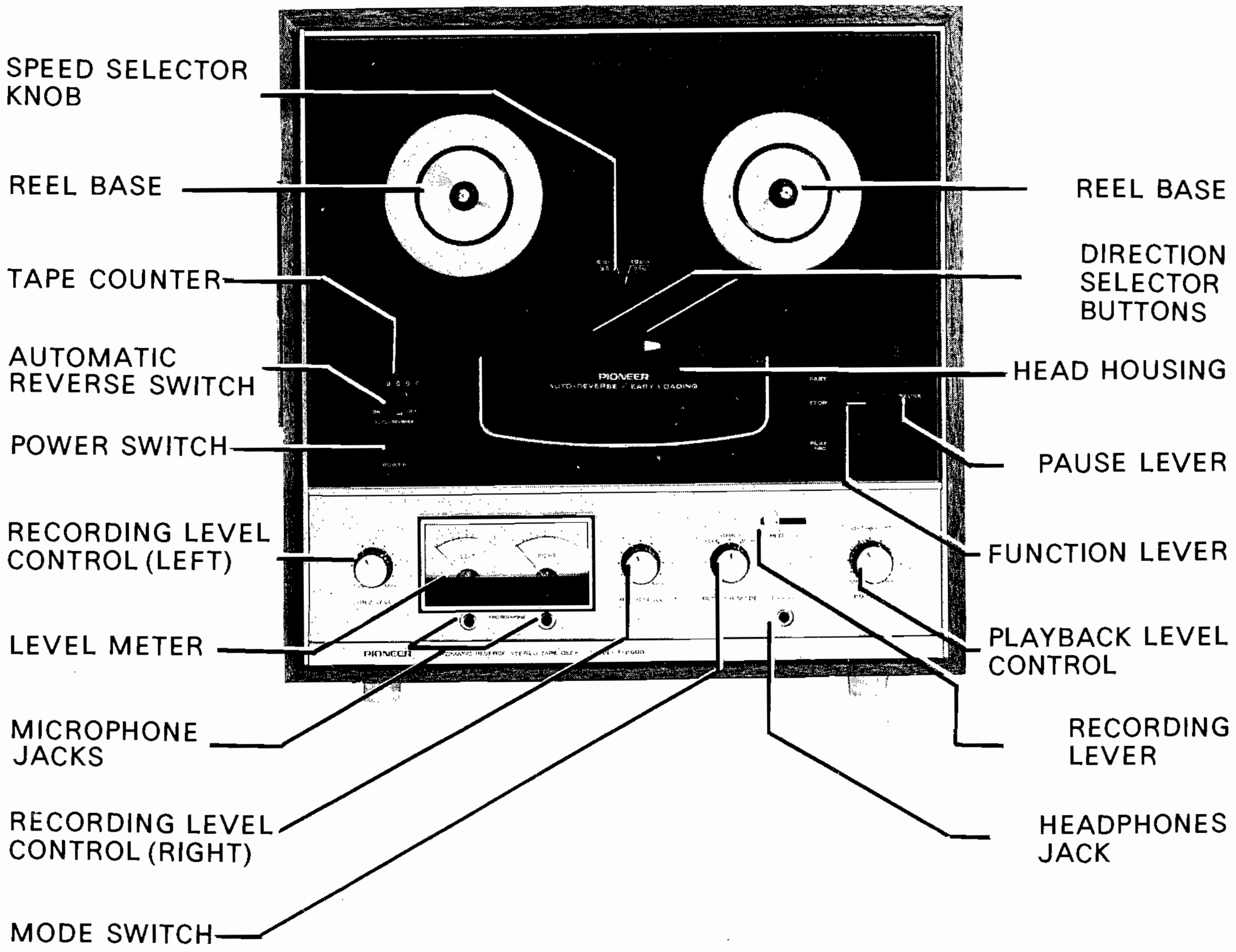
4519

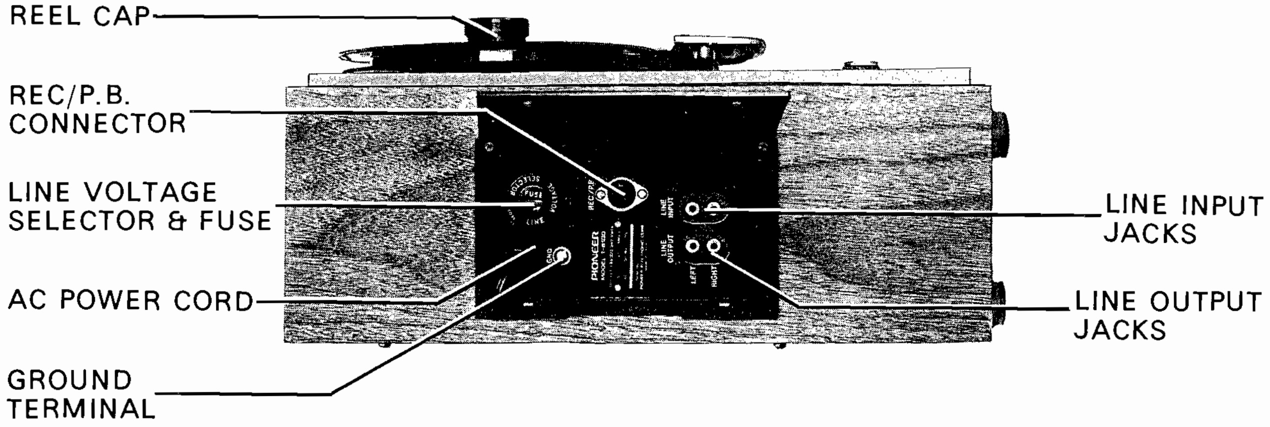
1. SPECIFICATIONS

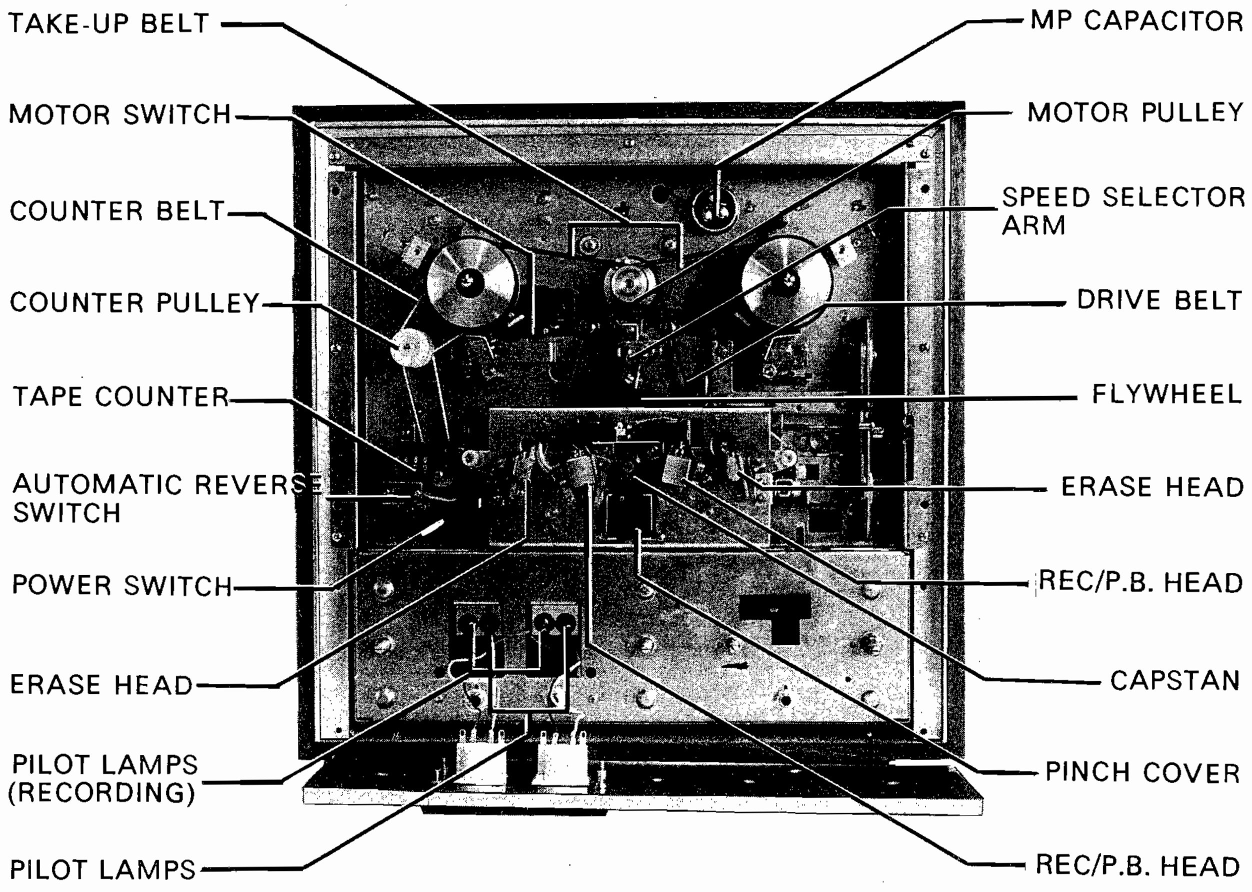
Drive and control	Center capstan drive with automatic reverse recordings and playbacks, and automatic repetition playbacks by sensing foil or by manual operation.
Track	4-track 2-channel stereo 4-track 1-channel mono
Recording compensation characteristics	NAB
Erasing	AC system
Reel	Up to 7 inches
Motor	Hysteresis synchronous motor
Heads	Two 4-track 2-channel heads for recording and playback Two 4-track 2-channel heads for erasing
Tape speeds	7-1/2 ips (19cm/s) 3-3/4 ips (9.5cm/s)
Fast winding time	Approx. 110 seconds (1200ft/370m tape)
Wow and flutter	Less than 0.12% at 7-1/2 ips (19cm/s) Less than 0.20% at 3-3/4 ips (9.5cm/s)
Frequency response	30 to 20,000Hz (50 to 15,000Hz, ±2dB) at 7-1/2 ips (19cm/s) 30 to 13,000Hz at 3-3/4 ips (9.5cm/s)
SN Ratio	More than 55dB
Input	Microphone . . . . 0.3mV to 240mV/50kΩ Line input . . . . 30mV to 24V/330kΩ
Output	Line output . . . . 0.775V/50kΩ Headphone output 0.2mW/8Ω
Connector	REC/P.B. . . . . DIN type Line input . . . . Pin jack Line output . . . . Pin jack Microphone . . . . Standard jack Headphones . . . . Standard stereo jack
Built-in semiconductors	Transistors . . . . 14 Diodes 4
Power requirement	AC 110V, 117V, 130V, 220V and 240V (50Hz or 60Hz)
Maximum power consumption	70VA
Overall dimensions	17"3/16(W) X 17"(H) X 7"5/32(D) (including dust cover and foot) 437mm(W) X 434mm(H) X 182mm(D) (including dust cover and foot)
Weight	With package 38 lb 11 oz (17.6kg) Without package 28 lb 9 oz (13kg)
Furnished accessories	PR-70 empty reel (easy-loading reel) . . . . 1 Dust cover . . . . 1 Reel cap . . . . 2 Connection cord . . . . 2 Splicing tape . . . . 1 Sensing foil . . . . 1 Cleaning kit . . . . 1 Fuse (1A) . . . . 1 Motor pulley (50Hz or 60Hz) 1

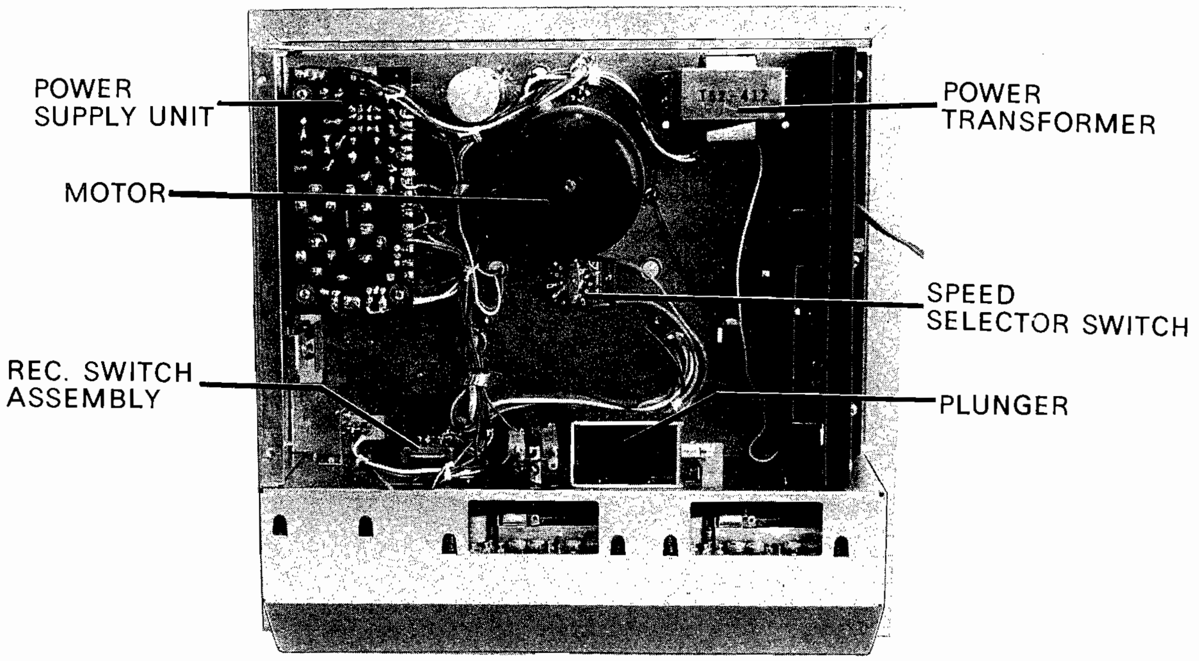
NOTE: Specifications and the design subject to possible modification without notice due to improvements.

2. PARTS IDENTIFICATION


SPEED SELECTOR KNOB
REEL BASE
TAPE COUNTER
AUTOMATIC REVERSE SWITCH
POWER SWITCH
RECORDING LEVEL CONTROL (LEFT)
LEVEL METER
MICROPHONE JACKS
RECORDING LEVEL CONTROL (RIGHT)
MODE SWITCH
REEL BASE
DIRECTION SELECTOR BUTTONS
HEAD HOUSING
PAUSE LEVER
FUNCTION LEVER
PLAYBACK LEVEL CONTROL
RECORDING LEVER
HEADPHONES JACK
PIONEER


REEL CAP
REC/P.B. CONNECTOR
LINE VOLTAGE SELECTOR & FUSE
AC POWER CORD
GROUND TERMINAL
LINE INPUT JACKS
LINE OUTPUT JACKS


TAKE-UP BELT
MOTOR SWITCH
COUNTER BELT
COUNTER PULLEY
TAPE COUNTER
AUTOMATIC REVERSE SWITCH
POWER SWITCH
ERASE HEAD
PILOT LAMPS (RECORDING)
PILOT LAMPS
MP CAPACITOR
MOTOR PULLEY
SPEED SELECTOR ARM
DRIVE BELT
FLYWHEEL
ERASE HEAD
REC/P.B. HEAD
CAPSTAN
PINCH COVER
REC/P.B. HEAD


POWER SUPPLY UNIT
MOTOR
REC. SWITCH ASSEMBLY
POWER TRANSFORMER
SPEED SELECTOR SWITCH
PLUNGER

3. OUTLINE OF ELECTRIC CIRCUIT

Since the heads of Model T-6600 are designed for both playback and recording operation, the amplifier circuit is used for playback and recording operation in forward and reverse directions by switching the amplifier.

Fig. 1 shows the block diagram of recording/playback amplifier and the bias oscillator in case of the left-channel playback operation.

PLAYBACK CIRCUIT

1. The input signal picked up by the head (F.R.P.H) passes through the switch ($S_{2\text{-}1}$) and is amplified by the transistors (Q1, Q2).
2 The amplified signal which passes through the switches ($S_{2\text{-}3}$, $S_{2\text{-}2}$) is negatively fed back to the emitter of Q1 to compensating for the NAB standard playback characteristic. At the same time, this signal is fed to transistor Q3 through the VOLUME (VR_3) and the switch ($S_{2\text{-}4}$).
3. The signal amplified by transistors Q3 and Q4 is fed to the OUTPUT terminals. It is also fed to transistor Q5 to drive the LEVEL METER (VU) and to the HEADPHONE Jack through the matching transformer.
4. The output levels at the OUTPUT terminals and the output for headphone can be controlled with the VOLUME (VR_3).

RECORDING CIRCUIT

With the FUNCTION LEVER set to "REC", the switches ($S_{2\text{-}1}$), ($S_{2\text{-}6}$) are connected to the R side (recording).

1. The input signal which comes through the input terminals (DIN-type connector or LINE INPUT terminals) passes through the switch ($S_{2\text{-}1}$) and is amplified by transistors (Q1, Q2).
2. The amplified input signal is negatively fed back to the emitter of transistor Q1, through the switches ($S_{2\text{-}3}$, $S_{2\text{-}2}$). The ratio of negative feedback level is controlled by the REC VOLUME for adjusting the sensitivity of this stage.
3. The signal which has passed through the REC VOLUME and the switch ($S_{2\text{-}4}$) is amplified by next stage (Q3, Q4) and is negatively fed back to the emitter of transistor Q3 through $S_{2\text{-}5}$ for low boost.
4. This signal is fed to the recording compensator (high boost) amplifier Q6.
5. The signal for headphone output picked up from Q4 collector and through transistor Q5 and the matching transformer. Also signal for line output is supplied from Q4 collector directly.
6. The recording level is checked with the LEVEL METER (VU) connected to the emitter circuit of transistor Q5.
7. The bias oscillator is made by push-pull circuit of transistors Q7 and Q8. The bias oscillator output current is fed to the erase head (E.H.) to erase the signal recorded on the tape. At the same time, it is supplied to the recording head (R.P.H.) through the switch ($S_{1\text{-}5}$) for recording bias.

SWITCHING CIRCUIT

1. With the POWER SWITCH (S_{12}) turned "ON", 30V and 24V appear on the two secondary winding of the power transformer.
2. The 24 volts AC rectified by the SILICON DIODE (D_3) passes through the RELAY CONTACT ($RL_{1\text{-}4}$) and lights the DIRECTION PILOT lamp (F) indicating the forward tape direction.
3. With the contact of the "REV." side of the DIRECTION SELECTOR SWITCH (S_8) closed, current flows through the relay and the resistor (R_{64}), causing the relay to operate. The relay is held operated by the contact $RL_{1\text{-}4}$.
4. The current operates the PLUNGER through contact $RL_{1\text{-}3}$ and the switch interlocked to it switches the input to the amplifier circuit and the ouput from the H.F. oscillator circuit.
5. When the PLUNGER starts PLUNGER SWITCH (S_9) shortcircuits the resistor R_{66} permitting more current to flow, increasing the magnetic attraction. After the starting operation of the PLUNGER releases the switch S_9, allowing the current to flow through R_{66}, and the PLUNGER is held without big heat.
6. When the contact of the "FWD" side of the switch (S_8) is closed, both ends of the relay coil are shorted causing the relay to release.
7. Since the contact point is inserted in parallel into the switch (S_8), the same operation as in 3 and 6 above will be performed when the contact point is shorted by the sensing foil affixed on the tape.
8. When the AUTOMATIC REVERSE SWITCH (S_{14}) is set to the "OFF", the shorting of the contact point does not affect the relay operation.
9. The switch S_7 is connected in series with the switch (S_8). When the FUNCTION LEVER is set to the "FAST" position, this switch releases DIRECTION SELECTOR switch and the contact point to prevent an automatic reversal of the tape.

MOTOR CIRCUIT

1. When the tape is threaded SHUT OFF SWITCH (S_{11}) is pushed on by tape. With the FUNCTION LEVER set to the "PLAY" or "FAST" position, MOTOR SWITCH (S_{10}) turns on.
2. When the POWER SWITCH S_{12}, the SHUT OFF SWITCH S_{11}, and the MOTOR SWITCH S_{10} are closed, 100V will be supplied to the motor.
3. With the contact of the "REV" side of the DIRECTION SELECTOR SWITCH (S_8) is closed, relay will operate. The STARTING COIL(L) of the motor changes by the operation of the relay contacts ($RL_{1\text{-}1}$, $RL_{1\text{-}2}$), causing the revolution of the motor to reverse.

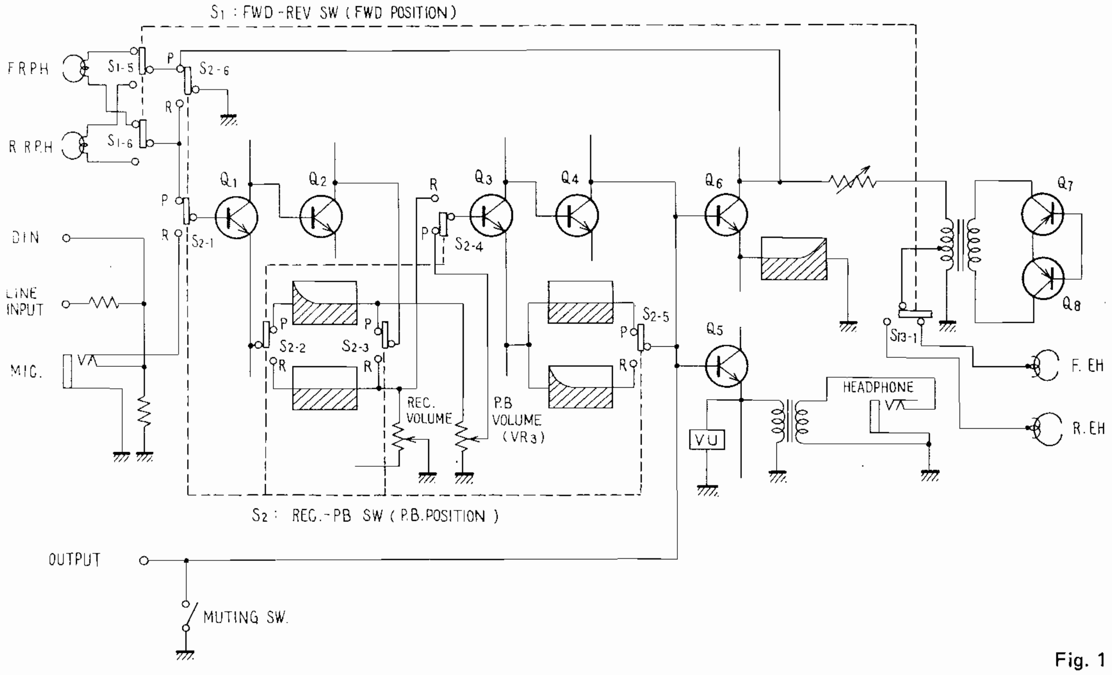


Fig. 1

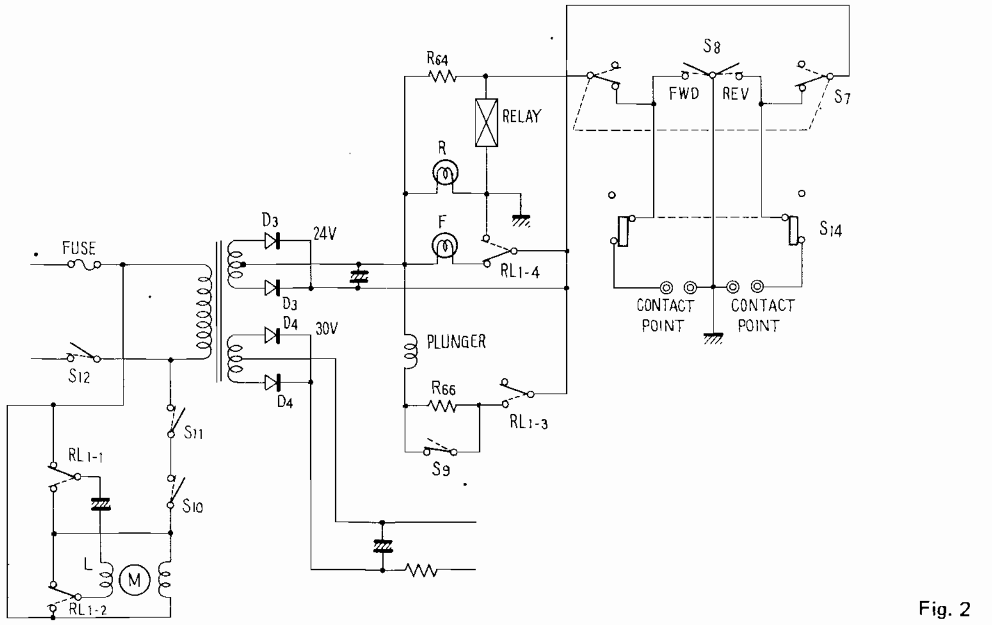


Fig. 2

4. DISASSEMBLY

FRONT PANEL

1. Remove the FUNCTION LEVER knob, the PAUSE LEVER knob and the SPEED SELECTOR knob.
2. Open the HEAD HOUSING and remove the two screws as shown in Photo 1 and the two screws from the reel base frames. Then, remove the front panel.
3. With the front panel removed, most of the mechanism can be inspected as shown in Photo 2.

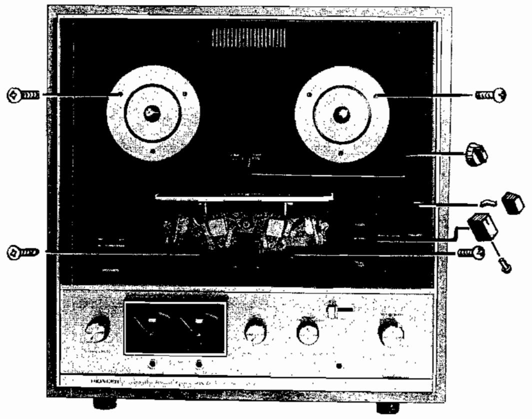


Photo 1

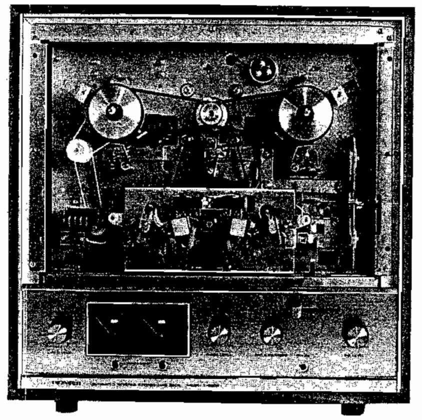


Photo 2

AMPLIFIER PANEL

1. Remove the RECORDING LEVEL control knobs (Left and Right), the MODE SWITCH knob, and the PLAYBACK LEVEL control knob as shown in photo 3.
2. Remove the lock nuts and washers that secure the shafts of the RECORDING LEVEL control knobs (Left and Right) and the PLAYBACK LEVEL control knob.

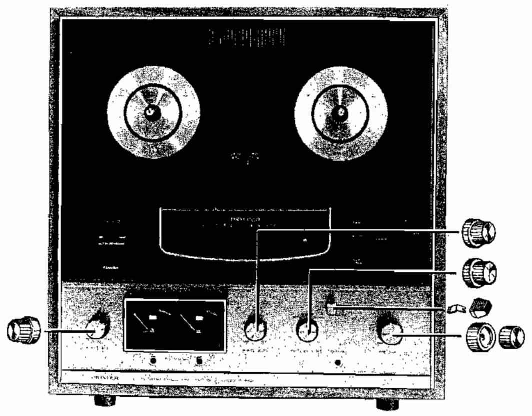


Photo 3

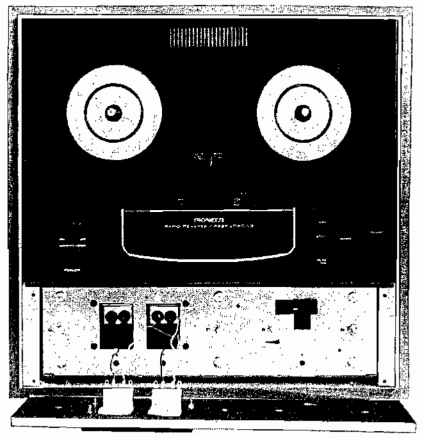


Photo 4

WOODEN BASE

1. Remove the four screws on the bottom of the wooden base.
2. Remove the wooden base, the motor, the plunger, the power supply P.C.B. assembly, and the other parts can be inspected as shown in Photo 6.

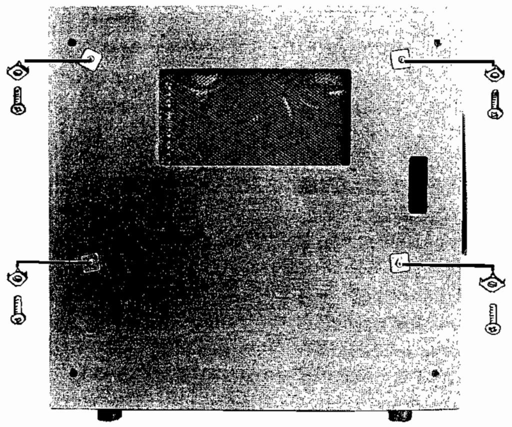


Photo 5

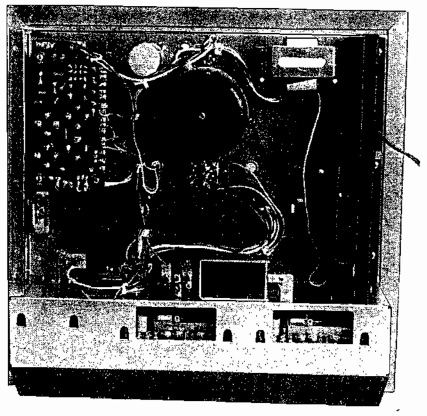


Photo 6

COVER OF AMPLIFIER CHASSIS

1. With the wooden base removed, remove the four screws shown in Photo 7, and pull the cover frontwards. The cover will come off easily.
2. With the cover removed, adjustments or replacement of the amplifier P.C.B. ass'y can be made as shown in Photo 8.

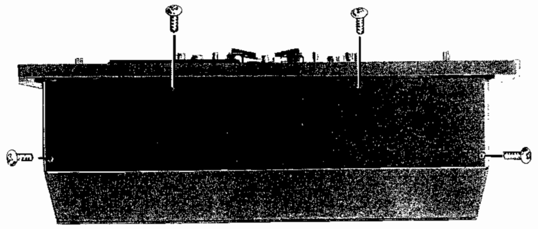


Photo 7

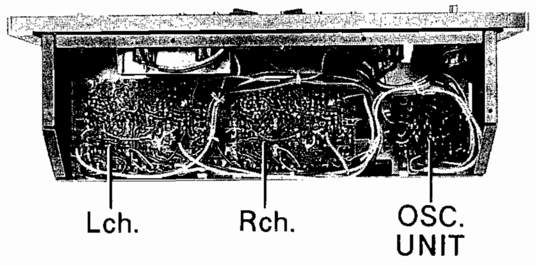


Photo 8

5. TROUBLESHOOTING

I. MECHANISM

SYMPTOM	POSSIBLE CAUSES	REMEDY
Power cannot be supplied to the unit.	a. Power cord is open. b. The fuse has blown c. POWER SWITCH is defective. d. Primary coil of power transformer is open.	a. Replace. b. Replace. c. Replace. d. Replace
Lamp does not come on. (Mechanism works normally.)	a. Direction lamp is not fitted in the socket correctly. b. Direction lamp socket is burnt out. c. Direction lamp socket is defective d. Electric circuit is open.	a. Retighten the lamp. b. Replace. c. Replace. d. Repair the circuit.
Motor does not work. (Tape is threaded normally and the FUNCTION LEVER is set to the "PLAY" position.)	a. MOTOR SWITCH (micro-switch) is defective. b. SHUT-OFF SWITCH is defective. c. MP (phase shift) capacitor is defective. d. Motor coil is not energized (owing to defective relay contacts). e. Motor is defective (coil is open).	a Replace or readjust the switch. b. Replace or readjust the switch. c. Replace d. Replace. e. Replace.
Capstan does not revolve. (Motor rotates normally)	a. Motor pulley setscrew is loosened. b. Belt is contaminated with oil. (belt slips) c. Belt is stretched. (loose belt) d. Belt is out of place. e. Flywheel bearing metal is short of oil. f. Bearing metal is stuck.	a. Tighten the screw with a hexagonal wrench. b. Wipe the belt clean with pure alcohol. c. Set it again. d. Replace. e. Lubricate or replace. f. Replace.
Back tension does not work in "PLAY" operation.	a. Auxiliary brake is defective. b. Tension adjusting screw is not adjusted correctly.	a. Adjust. b. Adjust.
Tape does not travel at a normal speed.	a. Capstan and pinch roller are contaminated with oil. (slipped capstan) b. Pinch roller is defective. c. Pinch roller metal is loosened. d. Supply reel brake does not detatch. e. Supply reel shaft is short of oil. f. Supply reel shaft is stuck.	a. Wipe them clean with pure alcohol. b. Replace. c. Retighten. d. Check fast forward cam and brake pole. e. Lubricate. f. Replace.

SYMPTOM	POSSIBLE CAUSES	REMEDY
	g. Supply reel Aux. brake shoe is defective.	g. Replace.
	h. Supply reel clutch is defective.	h. Replace reel pulley.
	i. Take-up belt is contaminated with oil.	i. Wipe the belt clean with pure alcohol.
	j. Take-up belt is stretched.	j. Replace.
	k. Take-up belt is out of place.	k. Set it again.
	l. Take-up reel clutch is defective.	l. Replace reel pulley.
	m. Take-up reel brake cannot be released.	m. Check fast forward cam and brake pole.
Fast forward operation does not start.	a. Take-up belt is contaminated with oil.	a. Wipe the belt clean with pure alcohol
	b. Take-up belt is stretched.	b. Replace.
	c. Take-up belt is out of place.	c. Set it agein.
	d. Tension adjusting screw is maladjusted.	d. Readjust.
	e. Supply reel brake shoe is not released.	e. Check fast forward cam and brake pole.
	f. Supply reel auxiliary brake is not released.	f. Check coupling condition of brake arm and Aux. brake arm.
	g. Take-up reel brake shoe is not released.	g. Check fast forward cam and brake pole.
	h. Tension brake is too strong.	h. Readjust the brake.
DIRECTION SELECTOR BUTTONS operate erroneously.	a. DIRECTION SELECTOR switch is defective.	a. Repair or replace the switch.
	b. DIRECTION SELECTOR switch has poor contact.	b. Clean its contacts or replace.
	c. Preset release switch (S_8) is defective.	c. Replace and readjust the switch.
	d. Contacts of relay (RL_1) are defective.	d. Replace the relay, or replace the power supply unit.
	e. Coil of relay (RL_1) is open.	e. The same as in "d".
	f. Contact pole is shorting to pole mounting plate.	f. Readjust.
Brake does not work.	a. Brake shoe is unstuck or out of place.	a. Fix brake shoe properly.
	b. Brake spring is out of place.	b. Hook the spring again.
	c. Brake mechanism is maladjusted.	c. Readjust.
	d. Side of reel base or the brake shoes are dirty.	d. Wipe them with pure alcohol.
Tape is slackened.	a. Brake is defective.	a. Replace.
	b. Brake mechanism is maladjusted.	b. Readjust.
	c. Supply and take-up tension are not proper.	c. Readjust or replace reel base.

SYMPTOM	POSSIBLE CAUSES	REMEDY
Can not change tape speed.	a. Motor has much end play. b. Tape speed selector arm is maladjusted. c. Tape speed selector stopper is maladjusted.	a. Replace. b. Readjust the arm. c. Readjust the stopper.
FUNCTION LEVER can not be set to "PLAY" position. Does not work.	a. Slide stopper spring is out of place. b. Tape speed selector stopper is bent.	a. Hook the spring again. b. Straighten.
TAPE COUNTER does not work.	a. Counter belt is out of place or snapped. b. TAPE COUNTER is defective.	a. Set it on again or replace. b. Replace.
Much mechanical noise.	a. Motor is defective. b. Driving belt touches tape speed selector arm. c. Revolving parts are short of oil. d. Reel base pully ass'y is defective.	a. Replace. b. Readjust. c. Lubricate. d. Replace.
Wow is noticeable.	a. Back tension is too strong. b. Dusty capstan. c. Capstan surface is scratched or deformed. d. Dusty pinch roller. e. Pinch roller is scratched or deformed. f. Pinch roller pressure is not enough. g. Driving belt is defective. h. Driving belt is contaminated with oil i. Flywheel ass'y is defective. j. Motor is defective.	a. Readjust. b. Wipe the capstan clean with pure alcohol. c. Replace. d. Wipe the roller clean with pure alcohol. e. Replace. f. Readjust. g. Replace. h. Wipe it clean. i. Replace. j. Replace.
PAUSE LEVER does not return smoothly.	a. Spring is out of place.	a. Hook the spring again.

II. ELECTRIC CIRCUITS

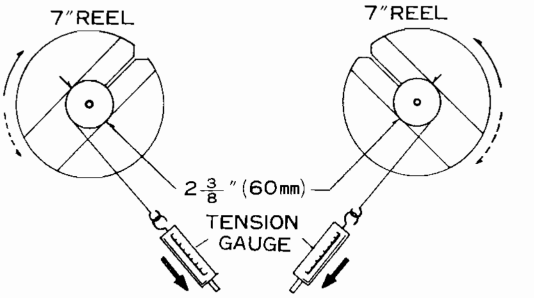
SYMPTOM	POSSIBLE CAUSES	REMEDY
The unit will not play back.	a. Connecting cord is disconnected or has poor contact.	a. Check connecting cord.
	b. R_{35} is not soldered or open.	b. Solder again or replace.
	c. If no B+ voltage on the each stage, rectifier diode (1S1849), power transformer, or resistors R_{35} & R_{42} defective.	c. Replace defective parts.
	d. Head is open.	d. Replace.
	c. Poor contact of switches S_1 & S_2.	e. Replace amplifier P.C.B. ass'y.
	f. VR_3 & VR_4 have poor contact.	f. Replace.
	g. Muting SW (S_6) has poor contact.	g. Replace.
Sound is too low.	a. VR_3 or VR_4 has high resistance or has poor contact.	a. Adjust or replace.
	b. Head wear out or dusty.	b. Replace or clean with pure alcohol.
	c. Transistor is defective.	c. Replace.
Distortion of sound is noticeable.	a. D_1 and D_2 are shorted.	a. Replace the diode.
	b. Too much input is supplied to connected amplifier.	d. Adjust the output.
Drop-out sound.	a. The head is dirty.	a. Wipe with head cleaning ribbon or clean with pure alcohol.
	b. The tape in use it too old.	b. Replace.
Poor treble.	a. The head is dirty	a. Wipe the head clean with pure alcohol.
	b. Angle adjustment is insufficient.	b. Readjust heads by using Test Tape.
	c. Equalizer is maladjusted.	c. Readjust equalizer by using Test Tape.
Poor base.	a. Resistance of R_{44} is lowered.	a. Replace R_{44} and just with the Test Tape.
	b. Coupling capacitor or emitter capacitor of each transistor is defective.	b. Replace defective capacitor.
Too much hum.	a. Connecting cord is poor connection or equipment is froating from ground.	a. Check connections and make ground completely.
	b. C_{61} and C_{63} are defective.	b. Replace.
Too much noise.	a. Transistors Q_1 and Q_2 are defective.	a. Replace.
	b. Resistors R_1, R_2, R_{11}, R_{12} or R_{13} are responsible for noise.	b. Replace defective parts.

SYMPTOM	POSSIBLE CAUSES	REMEDY
	c. Head is magnetized.	c. Demagnetize by head eraser.
Occasionally noisy.	a If noise comes out when body is vibrated, bad soldering or poor contact. b. Transistors of Q_1 and Q_2 are defective.	a. Solder defective points again or replace. b. Replace
The unit does not record.	a. Connection to LINE INPUT and MICROPHONE jacks incomplete. b. Inside of pin jacks connection are disconnected or shorted. c. Poor contact of switches S_1 and S_2. d. Head is defective. e. Oscillator circuit does not work.	a. Check connections b. Check and repair the pin jacks. c. Replace amplifier P.C.B. ass'y. d. Replace. e. Check and repair.
The sound is distorted and the sound level is too low.	a. The head is dirty. b. Bias current is not correct. c. Recording amplifier circuit has trouble. d. Oscillator transformer T_2 is broken. e. C_{51} & C_{52} defective or VR_7 & VR_8 are maladjusted.	a. Wipe the head clean with pure alcohol. b. Readjust. c. Replace printed circit board ass'y. d. Replace. e. Replace defective parts or readjust.
Does not erase.	a. Erasing head is open. b. Switches S_{4-3} & S_{4-4} are defective. c. Oscillator circuit does not work.	a. Replace. b. Replace. c. Check the circuit and repair.
Much crosstalk.	a. Head height is maladjusted. b. Tape does not run smoothly.	a. Readjust the level of the heads. b. Readjust.
Recording and playback are good, but LEVEL METER does not deflect.	a. LEVEL METER is defective. b. VR_5 is maladjusted.	a. Replace. b. Readjust.

6. ADJUSTMENTS OF MECHANISM

ADJUSTMENT OF BACK TENSION AT NORMAL SPEED

1) Switch the power "OFF" and fix one end of the tape to the reel.
2) Set the FUNCTION LEVER to the "PLAY" position. Hook a tension gauge at the end of the tape. Pull the gauge at a speed of about 7-1/2 ips (19 cm/s), and read the gauge.
   Note: A thread may be used instead of tape.
3) When the reel hub is 2-3/8" (60 m/m), normal back tension should be 2.1 oz (60 g) to 2.8 oz (80 g).
4) If the indicated back tension is more or less than the specified value, adjust the tension adjusting spring. Refer to Photo 9.
   Notes: • The tension adjusting spring is secured by double nuts. Make adjustment of the spring after removing the upper nut.
   • With the nut tightened, the back tension will become larger; with the nut loosened, the tension will become smaller.
5) Repeat this adjustment several times for right and left reels until the value of back tension remains within the specified range.
   Note: After adjustment, replace and tighten the upper nut and lock it with paint so that the lower nut should not be loosened.



Pull the tension gauge at a speed of 7½(19cm/s)

Fig. 3

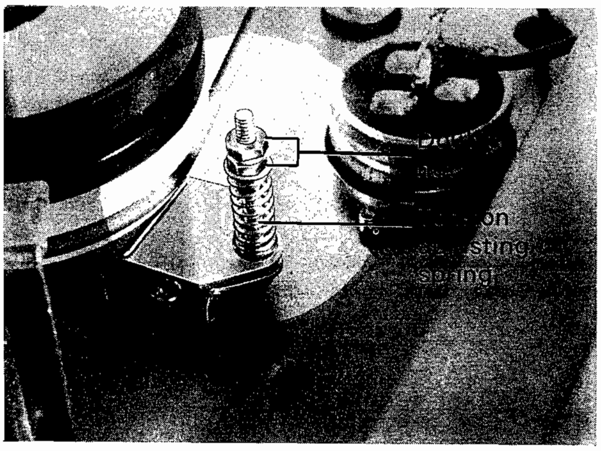
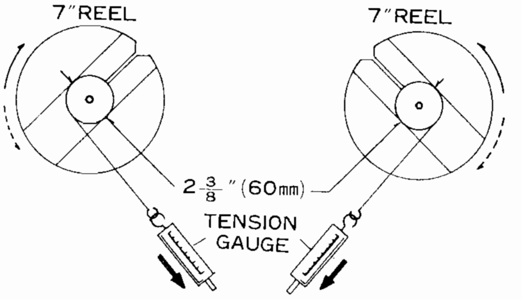


Photo 9

ADJUSTMENT OF TAKE-UP TENSION AT FAST FORWARD

1) Switch the power "ON". Hook a tension gauge at the end of the tape.
2) Set the FUNCITON LEVER to the "FAST" position.
3) Pull the tension gauge until the reel stops rotating.
4) When the reel hub is 2-3/8" (60 mm), normal take-up tension should be 7.05 oz (200 g) to 8.1 oz (230 g).
5) If the indicated take-up tension is more or less than the specified value, adjust the tension by controlling the tension adjusting screw. See Photo 10.
   Notes: • If the 4φ nut is loosened beforehand, adjusting screw may be easily moved.
   • With the screw tightened, the tension will become larger; with the screw loosened, the tension will become smaller.
6) Repeat this adjustment several times for right and left reels, until the value of the take-up tension remains within the specified range.
   Note: After adjustment, tighten the 4φ nut and lock it with paint so that the adjusting screw should not be loosened.



Pull the tension gauge until the reel stops rotating

Fig. 4

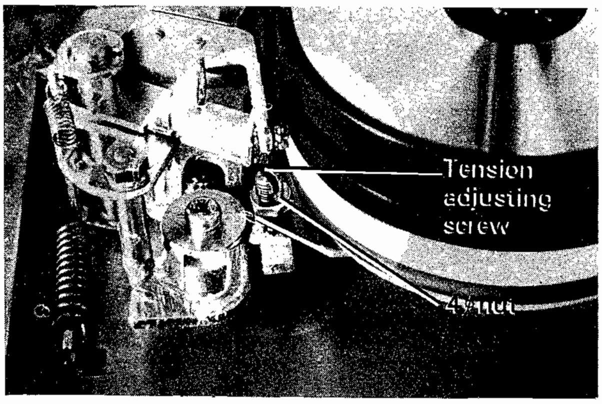


Photo 10

ADJUSTMENT OF BACK TENSION AT FAST FORWARD

1) Switch the power "ON". Place a reel to which the tape is fixed on the left-hand side reel base.
2) Set the FUNCTION LEVER to the "FAST" position. Hook a tension gauge at the end of the tape and pull it until the reel starts rotating
   Note: Measure the back tension of the left-hand side reel while the take-up reel is rotating at a high speed.
3) When the reel hub is 2-3/8" (60 mm), normal back tension should be 1/4 oz (7g) to 7/10 oz (20g).
4) If the indicated back tension is more or less than the specified value, adjust the tension with the tension brake which is in contact with the reel base.
   Notes:
   - If the tension brake is pressed harder to the reel base, the back tension will become larger.
   - Since the tape counter is loaded on the left reel base, the contact pressure of the tension brake to the left reel base can be smaller than that to the right reel base.
   - Setting the FUNCTION LEVER to the "STOP" position will make an adjustment of the tension brake easier.
5) Repeat this adjustment several times for right and left reels until the value of back tension remains within the specified range.

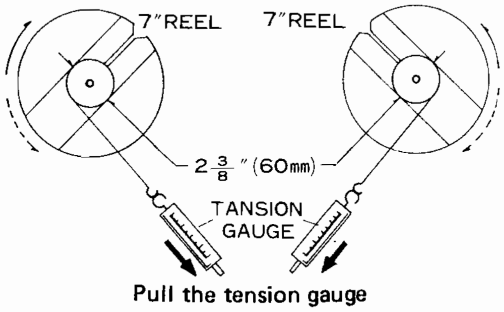


Fig. 5

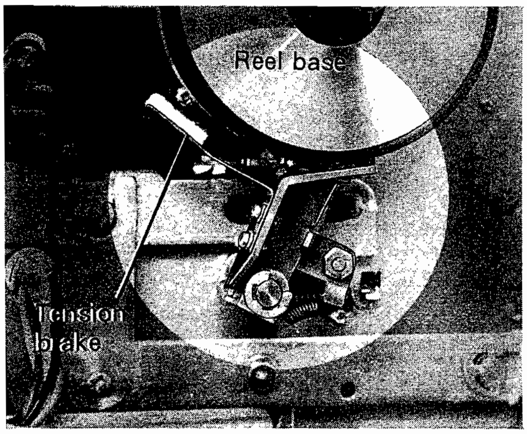


Photo 11

ADJUSTMENT OF BRAKE

1) Bend the brake pole slightly so that the brake shoe detaches from the reel base in "PLAY" and "FAST" operations.
2) Bend the pawl of the auxiliary brake arm so that the auxiliary brake contacts the reel base pulley in "PLAY" operation, and detaches from the pulley in "FAST" operation.
3) Repeat this adjustment for right and left reel bases.
4) The brake assembly should be adjusted as shown in the table below.

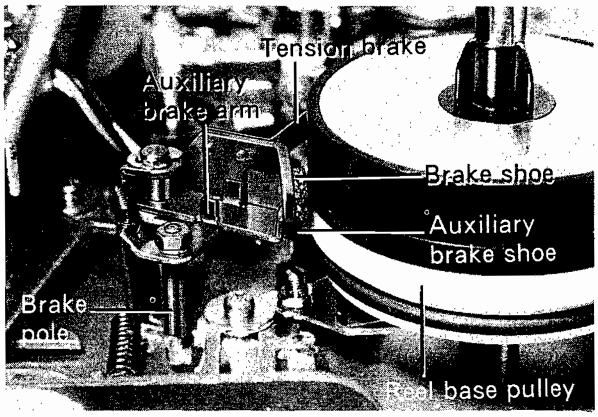


Photo 12

	PLAY	STOP	FAST	ADJUSTING PORTION
Brake shoe & Reel base	About 1/32"~ 3/32" (0.5~1.5 mm) apart	In contact	About 3/32"~ 1/16" (1.5~2 mm) apart	Brake pole
Auxiliary brake shoe & Reel base pulley	In contact	In contact	About 1/32"~ 1/16" (0.5~1 mm) apart	The pawl of the auxiliary brake arm

	PLAY	STOP	FAST	ADJUSTING PORTION
Tension brake & Reel base	About 1/8"~ 5/16" (3~4mm) apart	About 1/4" (5 mm) apart	In contact	Tension brake

BRAKE SHOES WORKING

FAST POSITION

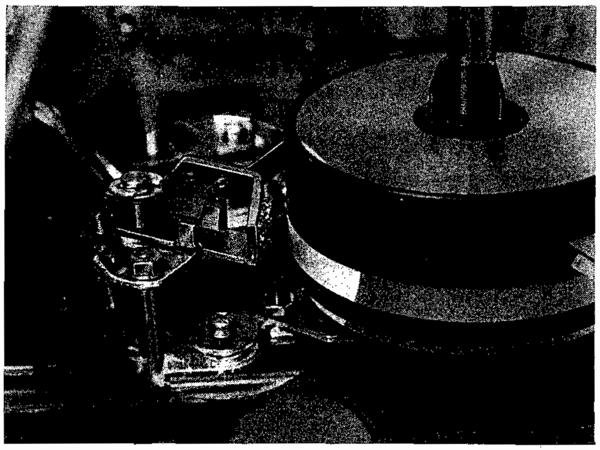


Photo 13

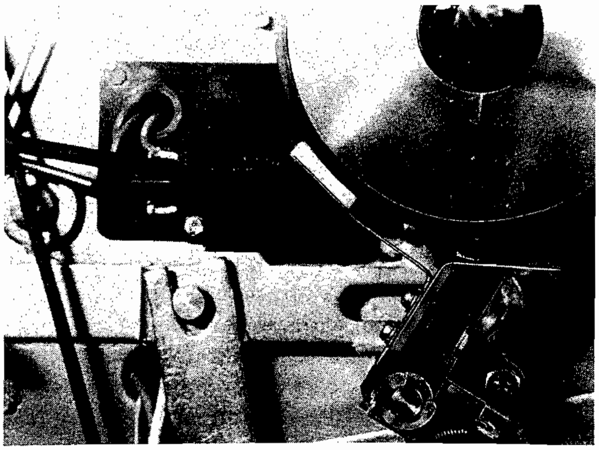


Photo 14

STOP POSITION

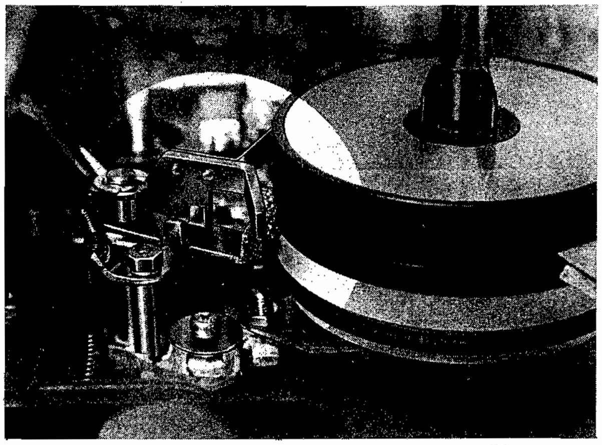


Photo 15

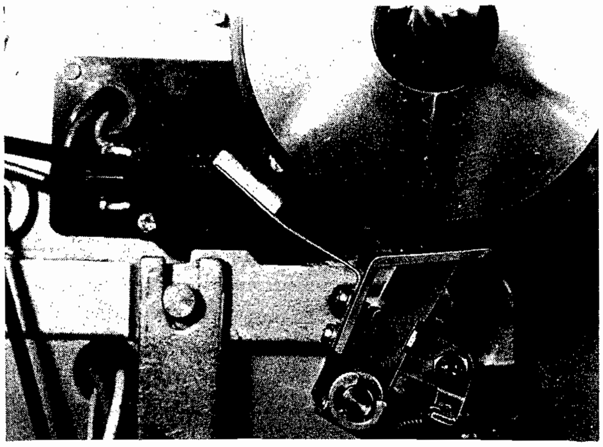


Photo 16

PLAY POSITION

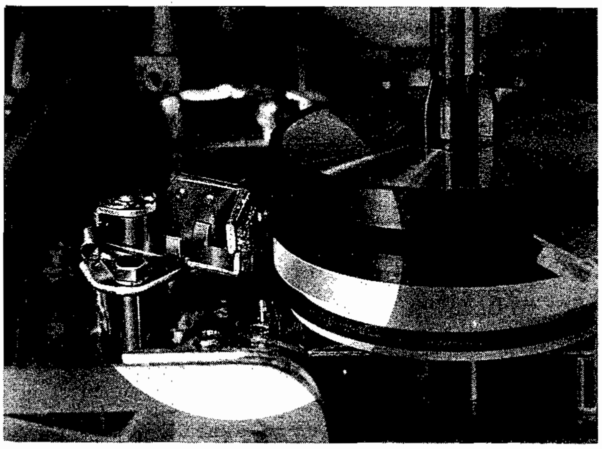


Photo 17

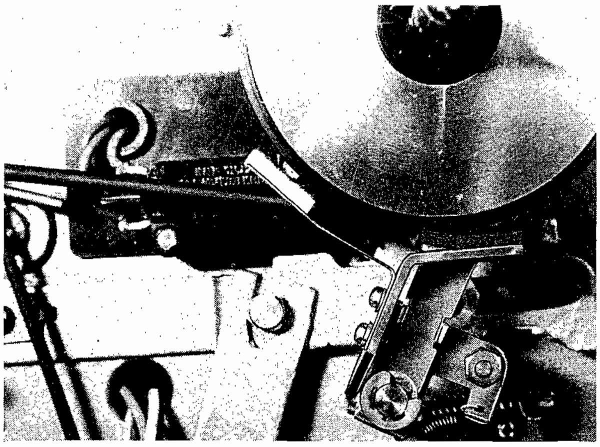


Photo 18

PINCH ROLLER PRESSURE ADJUSTMENT

1) Prepare a hexagonal wrench (4ϕ) and a Philips⊕screwdriver (medium size).
2) Set the FUNCITON LEVER to the "PLAY" position. After loosening the screw ② completely, control the adjusting screw ① so that the pinch roller contacts the capstan uniformly. Then, lock the position of the pinch roller with the screw ② (Fig. 7).
3) Position the pinch roller shaft at almost the center of the movable range with the shaft hole of the pinch roller frame.

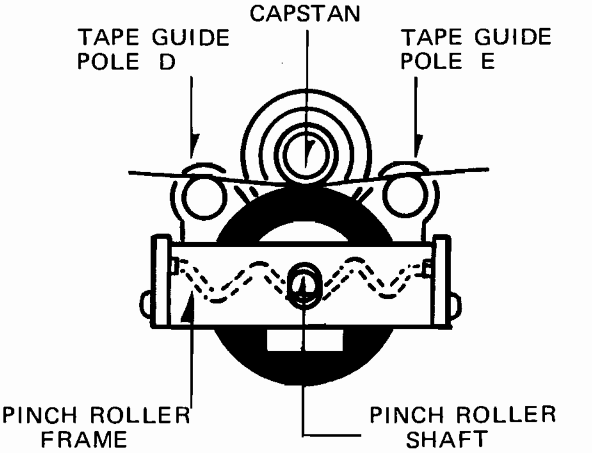


Fig. 6

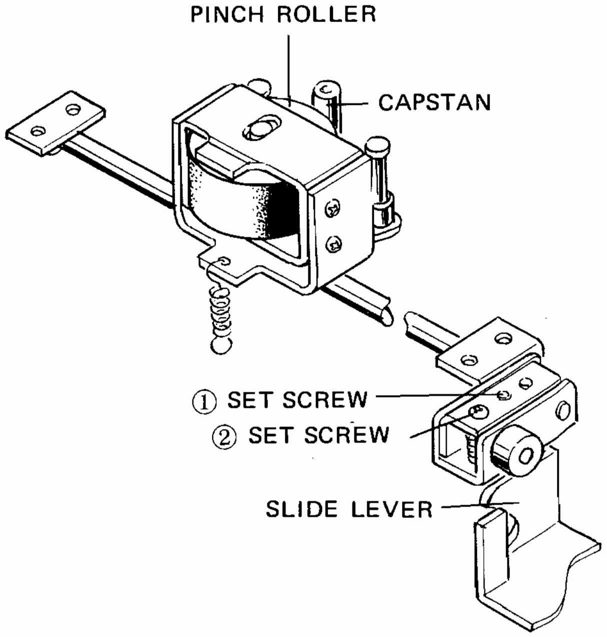


Fig. 7

ADJUSTMENT HEIGHT LEVEL OF TRAVELING TAPE

The height level of the tape traveling should not vary with respect to the head when the tape is moving at the normal speed in either forward or reverse direction. When the pinch roller assembly has been replaced or the contact pressure of the pinch roller has been adjusted, check the height of traveling tape by the following steps.

1) Run the tape at a normal speed, 7-1/2 ips (19 cm/s) or 3-3/4 ips (9.5 cm/s).
2) Change the directions of the tape traveling from forward to reverse or vice versa, and see if the height of the tape varies with respect to the head.
3) If any change of the height is noticed, adjust the perpendicularity of the tape guide pole.
4) Adjustment of the height of the tape should be made as suggested in the following table.

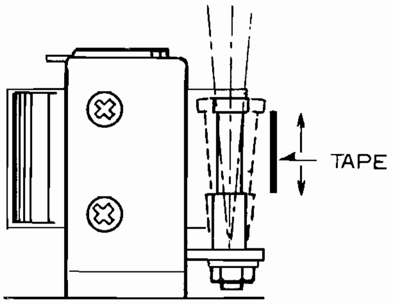


Fig. 8

5) Change the direction of the tape traveling several times until there is no variation noticed in the height of the tape.

Note: Even a slight inclination of the tape guide pole will cause a large variation in the level of the tape. Make an adjustment very carefully.

Direction of tape traveling	Adjustment	Adjusting portion	Displacement of tape travel
Forward	Tape guide pole D	Tilt the pole frontward	Lower
		Tilt the pole backward	Rises
Reverse	Tape guide pole E	Tilt the pole frontward	Lowers
		Tilt the pole backward	Rises

ADJUSTMENT OF PLAY IN PAUSE LEVER

1) Prepare a Philips ⊕ screwdriver (medium size)
2) Set the FUNCTION LEVER to the "STOP" position.
3) Move the PAUSE LEVER frontward lightly and check the end play in the LEVER.
4) Loosen the adjusting screw and move the PAUSE LEVER fixture to adjust the gap between the PAUSE LEVER fixture and the PAUSE CAM LEVER.

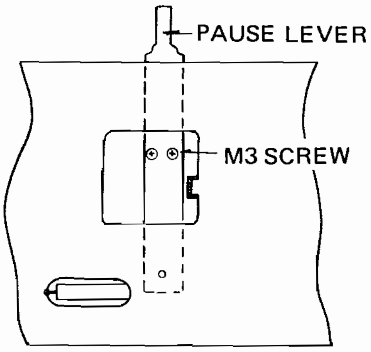

PAUSE LEVER
M3 SCREW

Fig. 9

HEAD LEVEL ADJUSTMENT

LEFT SIDE HEAD

1) Run a transparent tape in the forward direction.
2) Adjust the level of the recording/playback head so that the top edge of the head core may be slightly (0.0015"/0.0375 mm) below the top edge of the tape.
3) Adjust the level of the erase head so that the top edge of the head core may be slightly (0.0112"/0.2875 mm) above the top edge of the tape.
4) Adjust the level of the recording/playback head with screws A and B. Adjust the level of the erase head by loosening nuts A and B.
5) Run the tape in both directions several times and check if the level of the head is properly adjusted.

RIGHT SIDE HEAD

1) Run a transparent tape in the reverse direction.
2) Adjust the level of the recording/playback head so that the bottom edge of the head core may be slightly (0.0015"/0.0375 mm) above the bottom edge of the tape.
3) Adjust the level of the erase head so that the bottom edge of the head core may be slightly (0.0112"/0.2875 mm) below the bottom edge of the tape.
4) Adjust the level of the recording/playback head with screws A and B. Adjust the level of the erase head by loosening nuts A and B.
5) Run the tape in both directions several times and check if the level of the head is properly adjusted.

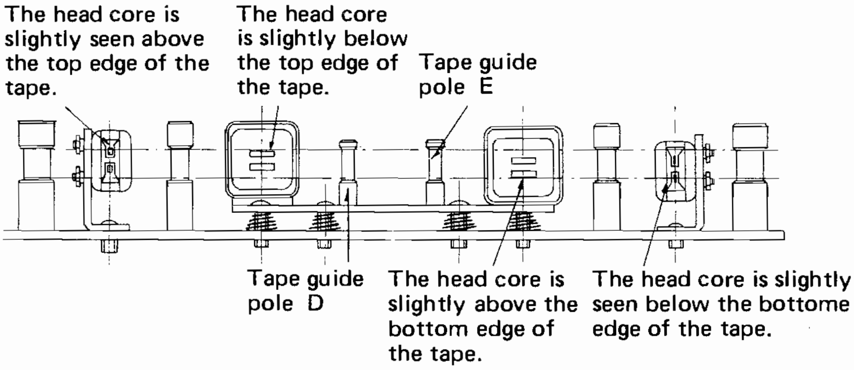

The head core is slightly seen above the top edge of the tape.
The head core is slightly below the top edge of the tape.
Tape guide pole E
Tape guide pole D
The head core is slightly above the bottom edge of the tape.
The head core is slightly seen below the bottome edge of the tape.

Fig. 10

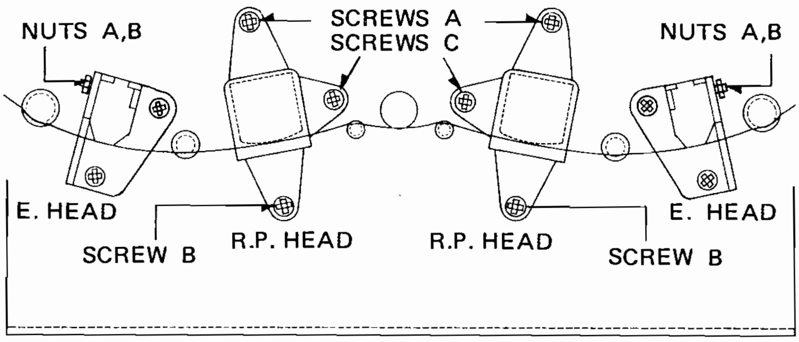

NUTS A,B
SCREWS A
SCREWS C
NUTS A,B
E. HEAD
SCREW B
R.P. HEAD
R.P. HEAD
E. HEAD
SCREW B

Fig. 11

HEAD TILT ADJUSTMENT

1) Adjust the tilt of the head so that the tape may contact the front surface of the tape uniformly.
2) Adjust the tilt of the recording/playback head with screws A and B, and the erase head by loosening nuts A and B.

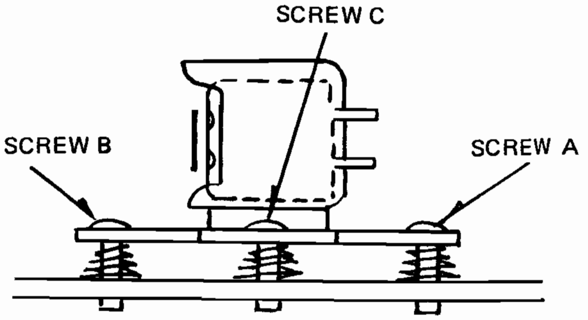


Fig. 12

7. ADJUSTMENT OF ELECTRIC CIRCUITS

RECORDING BIAS ADJUSTMENT

1) Connect the measuring instruments as shown in Fig. 13.
2) Set the unit to recording condition. Turn the RECORDING LEVEL control knob to the minimum, and set the MODE SWITCH to the "STEREO" position.
3) Adjust L_3 so that the amplitude of the bias waveform on the synchroscope connected to the test points (TP1) may not become over 1V (P-P).
4) Make this adjustment on both left and right channels in the forward and reverse operations.
5) Adjust the variable resistors (VR_{8-11}) so that the Vacuum Tube Voltmeters (V.T.V.M.) connected to the test points (TP 2) may indicate 9mV (this means that the bias current is 900 μA).
6) Set the MODE SWITCH to L (left channel) or to R (right channel), and to change the tape direction. Adjust L_4 so that the change of the bias waveform on the synchroscope may become the least significant as compared with the change in the case of "STEREO" operation.
7) Adjust VR_{12} so that the change of the bias current may remain within the range of ±100 μA. This value changes to voltage on V.T.V.M. of step (5), the range is approximately 8mV to 10mV.
8) Repeat the adjustment procedures 3 to 7 several times.

Notes: It may be necessary to increase or reduce the bias current in accordance with the recording/playback frequency response.

Direction of tape traveling	Channel	Adjusting portion
Forward	Left	OSC P.C.B. VR_8
	Right	OSC P.C.B. VR_{10}
Reverse	Left	OSC P.C.B. VR_9
	Right	OSC P.C.B. VR_{11}

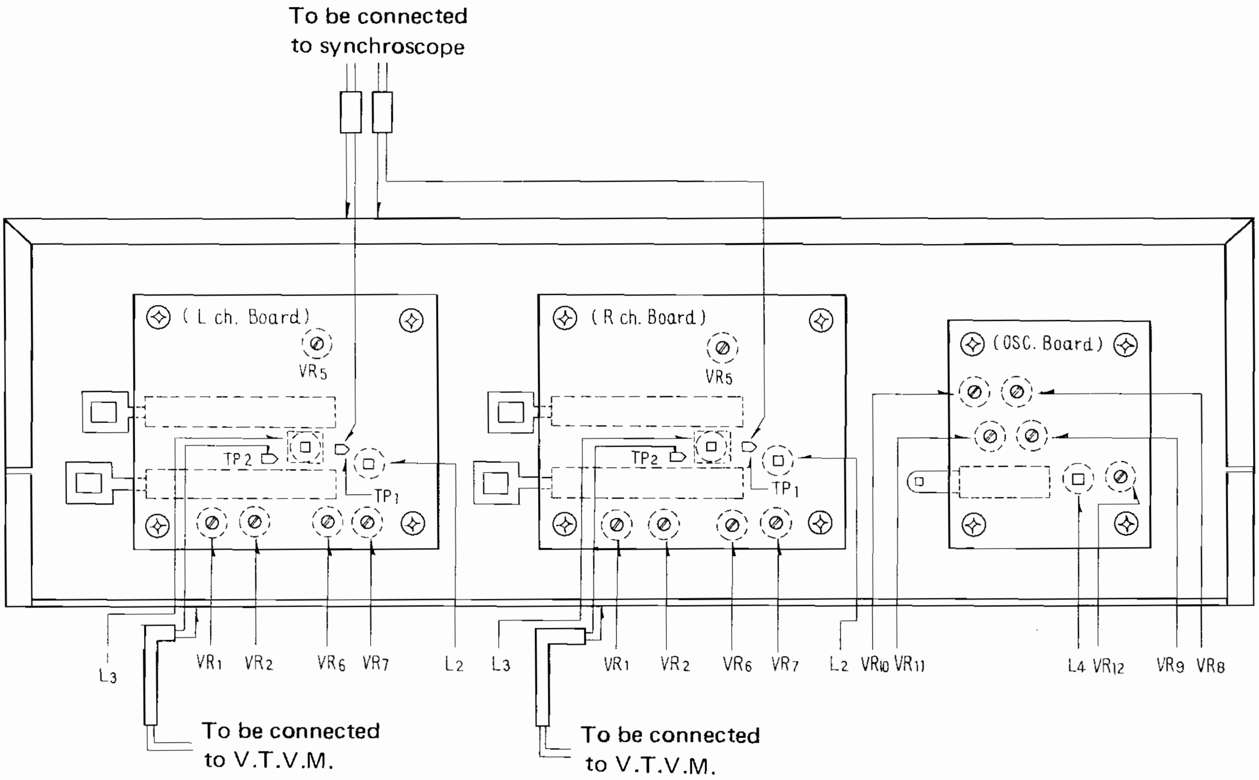

To be connected to synchroscope
(L ch. Board)
VR5
TP2
TP1
(R ch. Board)
VR5
TP2
TP1
(OSC. Board)
L3
VR1
VR2
VR6
VR7
L2
L3
VR1
VR2
VR6
VR7
L2
VR10
VR11
L4
VR12
VR9
VR8
To be connected to V.T.V.M.
To be connected to V.T.V.M.

Fig. 13

HEAD AZIMUTH ADJUSTMENT

With the mechanical adjustments of the heads and their environments completed, following adjustments should be made.

READJUSTMENT OF R/P HEAD LEVEL

1) Connect the V.T.V.M.'s to the right and left channels of the OUTPUT terminal respectively.
2) Load the test tape (TT-5000A) to the unit and run the tape at 7-1/2 ips (19cm/s.)
3) Playback Zone No. 1 of the test tape (700 Hz, 0 dB, 1 & 3 tracks) and adjust screws A and B so that the pointer of the V.T.V.M. may deflect to the "maximum".

Notes:
- The balance of the outputs of the left and right channels must not necessarily be considered.
- Set the P.B. LEVEL knob to the middle positon.
- It is enough to adjust the erase head under "Adjustment of Head Level Adjustment" but re-check at the end of this adjustment by recording and erasing operation.

HEAD SLIT ANGLE ADJUSTMENT

1) Connect the V.T.V.M's to the right and left channels of the OUTPUT terminal respectively.
2) Load the test tape and run the tape at 7-1/2 ips (19cm/s). —10 dB
3) Playback Zone No. 2 of the test tape ~~(10~~ kHz, 10 dB, full track). Adjust the head angle so that the pointers of the V.T.V.M's may reach to the maximum position by means of the screw C.

Notes:
- The output balance of the left and right channels must not necessarily be considered.
- Set the P.B. LEVEL knob to the "maximum" position.

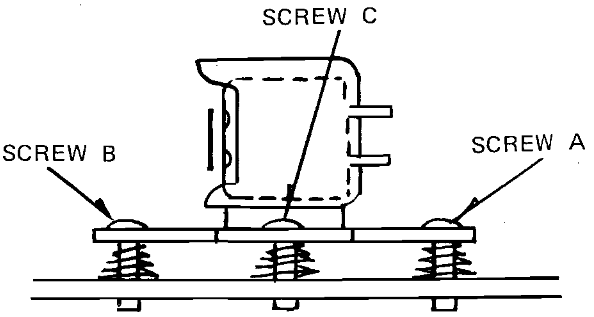


Fig. 14

LEVEL METER CALIBRATION

1) Connect the V.T.V.M's to the right and left channels of the OUTPUT terminal respectively.
2) Load the test tape and run the tape at 7-1/2 ips (19 cm/s).
3) Playback Zone No. 3 of the test tape (700 Hz, 0 dB, full track) and control the variable resistor VR_5 so that the pointers of the LEVEL METER may indicate the position as shown in Fig. 15.

Notes:
- Adjust the meter by VR_5 so that they indicates "0" position.
- In this case, the output level at LINE OUTPUT terminal should be set to 0 dB (0.775 V) for both channels.

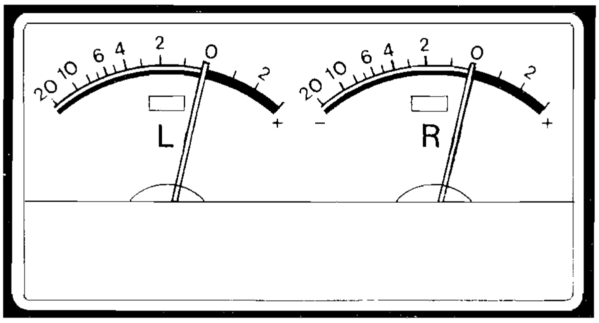


Fig. 15

PLAYBACK EQUALIZER ADJUSTMENT

1) Connect the V.T.V.M's to the right and the left channels of the OUTPUT terminal respectively.
2) Load the test tape and run the tape at 7-1/2 ips (19 cm/s).
3) Playback Zone No. 4 of the test tape (5 kHz, 0 dB, full track). Control the variable resistors $VR_{1\text{-}2}$.

V.T.V.M may indicate 0 dB (0.775 V).

Notes:
- Adjust the equalizer by controlling the VR_3 so that the playback output will become 0 dB (0.775 V) when playing back Zone No. 3 of the test tape (700 Hz, 0 dB).
- The variable resistor for P.B. LEVEL adjusting is used for both forward and reverse directions. Adjust the playback level in each direction (forward, reverse) to adjust the equalizer.

Direction of tape traveling	Channel	Adjusting portion
Forward	Left	VR1 of L ch. amplifier
	Right	VR1 of R ch. amplifier
Reverse	Left	VR2 of L ch. amplifier
	Right	VR2 of R ch. amplifier

PLAYBACK FREQUENCY RESPONSE CHECK

Playback Zones No. 5 to No. 11 of the test tape. See if the frequency response ranges as shown in Fig. 16-A when the tape travels at 7-1/2 ips, it ranges as shown in Fig. 16-B when the tape travels at 3-3/4 ips (9.5m/s).

When the playback frequency response is outside the specified range, adjust the head slit angle again.

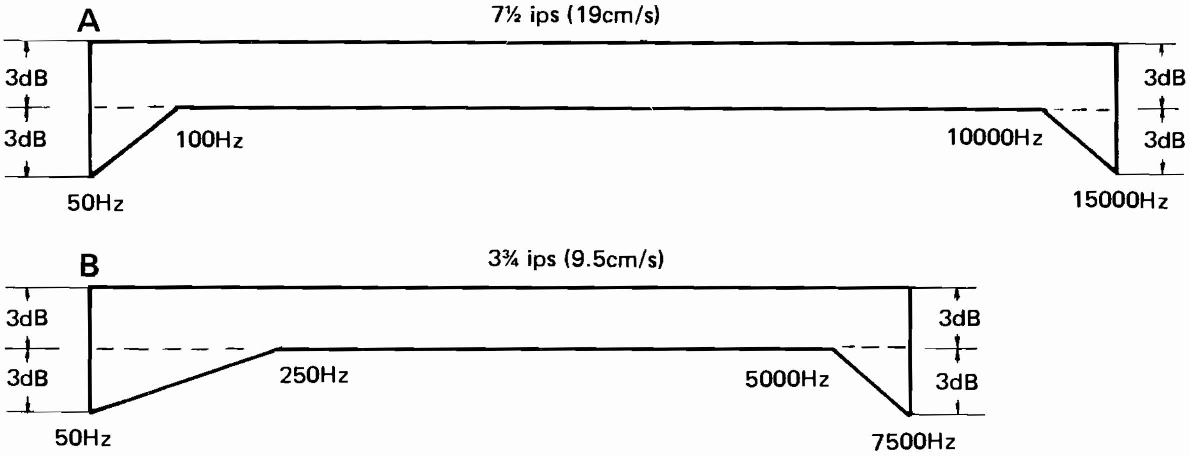


Fig. 16

RECORDING LEVEL CALIBRATION

After the bias circuit and the playback sensitivity have been adjusted or calibrated, the adjustment of the recording circuit sensitivity is to be performed. Use a new Scotch No. 111 tape for adjustment of recording level.

1) Connect an audio oscillator to LINE INPUT terminal and a V.T.V.M. to LINE OUTPUT terminal.
2) Run the tape at 7-1/2 ips (19 cm/s).
3) Supply signal of 1 kHz (-18 dB, about 100 mV) to LINE INPUT terminal and record it. Adjust the recording level by means of the RECORDING LEVEL knobs so that it may become 0 dB (0.775 V) on the LEVEL METER.
   Note: Once the recording level has been set with the knob, don't touch the knob hereafter.
4) Playback the tape recorded through the step 3. If V.T.V.M. voltage reading is less than 0 dB (0.775 V), turn the variable resistors VR6-7 to the right a little, and reading is more than 0 dB, turn them to the left a little. Do not turn the playback output level too much to avoid changing the level with V.T.V.M.
5) Try recording according to step 3 once more, and re-playback this recorded tape, then check playback level again, reading value should get close to 0 dB (0.775V).
6) Repeat this adjustment of both recording and playback several times so that the playback output level may become 0 dB (0.775 V).
   Note: During this adjustment, the P.B. LEVEL control knob (VR3 in both L and R channels) is set at the position when the playback sensitivity is calibrated. In other words, the playback output is 0 dB (0.775 V) when the Zone No. 3 of the test tape (700 Hz, 0 dB) is played back.

Direction of tape traveling	Channel	Adjusting portion
Forward	Left	VR6 of the L ch. amplifier
	Right	VR6 of the R ch. amplifier
Reverse	Left	VR7 of the L ch. amplifier
	Right	VR7 of the R ch. amplifier

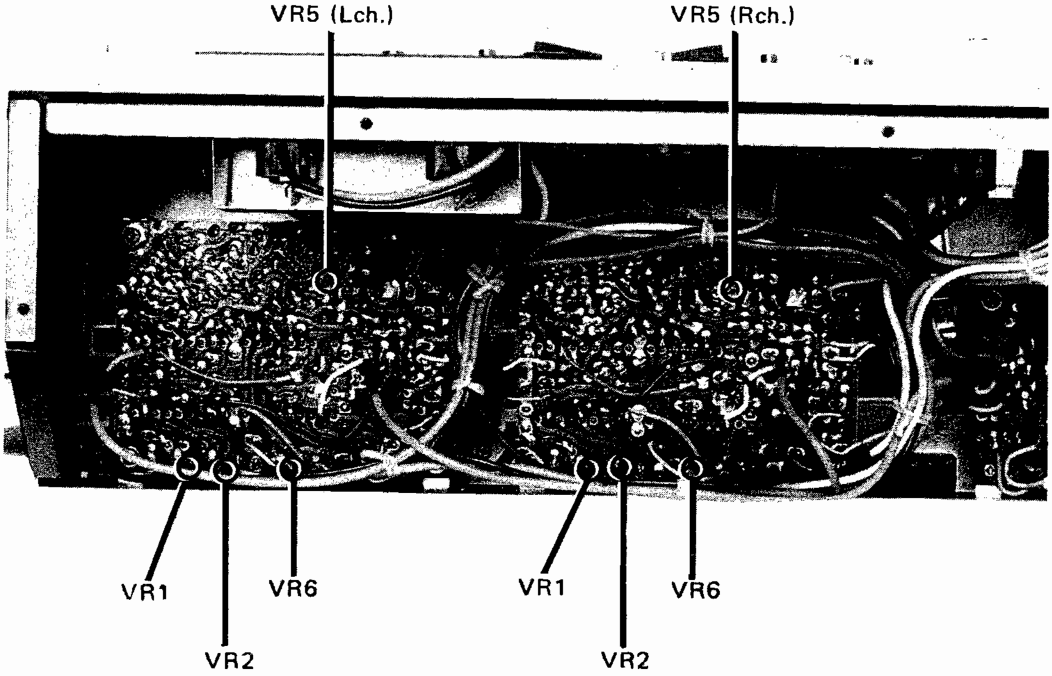


Photo 19

RECORDING COMPENSATOR ADJUSTMENT

1) Connect a V.T.V.M. to the test point (TP 2).
2) Set the tape speed at 7-1/2 ips (19 cm/s) and pull RECORDING LEVER only.

   Note: If the FUNCTION LEVER is set to the "PLAY" position, too, bias circuit will operate. Make sure to pull the recording lever only.
3) Supply the signal of 20 kHz (−40 dB, about 7.8 mV) through the LINE INPUT terminals and adjust L_2 so that the pointer of the V.T.V.M. may indicate the maximum.
4) If the unit is operated at the tape speed of 3-3/4 ips (9.5 cm/s), this adjustment is not always necessary. Check that the deflection of the pointer on the V.T.V.M. stays on about 11 kHz by changing the frequency of the audio oscillator.

Note: This adjustment has been carried out at the factory. It is necessary only when the recording frequency response is deviated extremely.

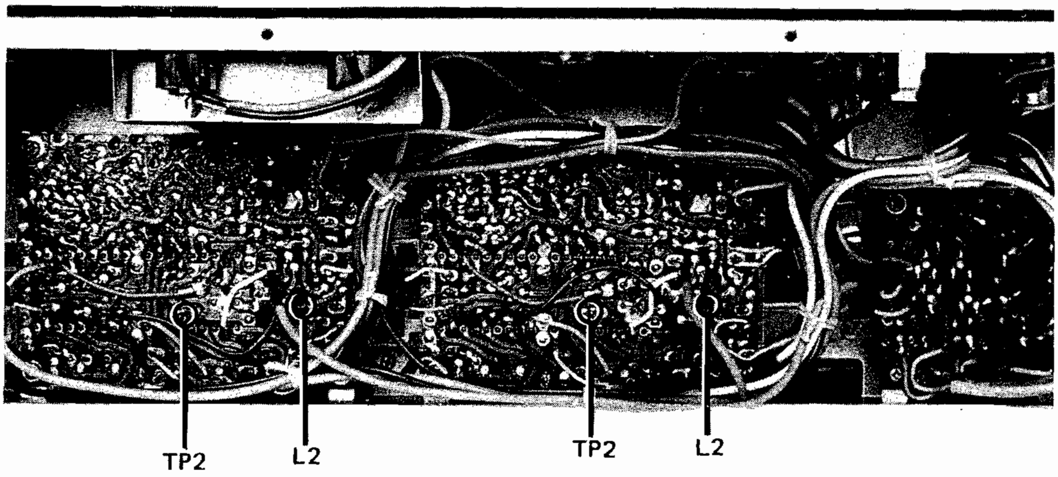


Photo 20

RECORDING/PLAYBACK FREQUENCY RESPONSE CHECK

1) Adjust the recording level and set the level of the line output to 0 dB (0.775 V=0 VU).
2) Run the tape at 7-1/2 ips (19 cm/s) and supply the signal of -38 dB (10 mV) to the LINE INPUT and record it.
3) Change the recording frequency response from 50∼15 kHz and continue recording.
4) When a recorded tape is played back the frequency should range as shown in Fig. 18-A with the tape traveling at 7-1/2 ips (19 cm/s); it ranges as shown in Fig. 18-B with the tape traveling at 3-3/4 ips (9.5 cm/s).
5) When the frequency response is outside the specified value, adjust the bias current.
   Note: · If the bias current is too small, distortion increases. So don't change bias too much.
   With the bias current changed, the frequency response in high frequency range varies.

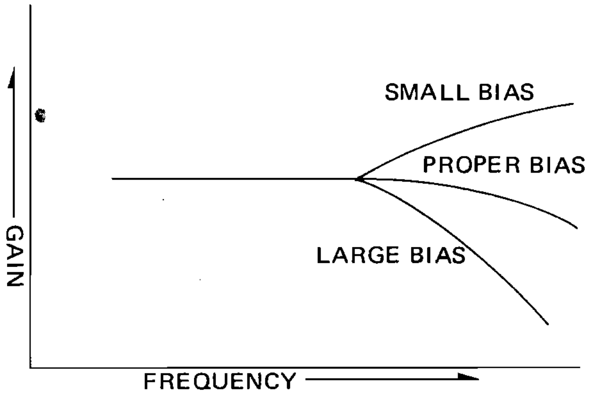


Fig. 17

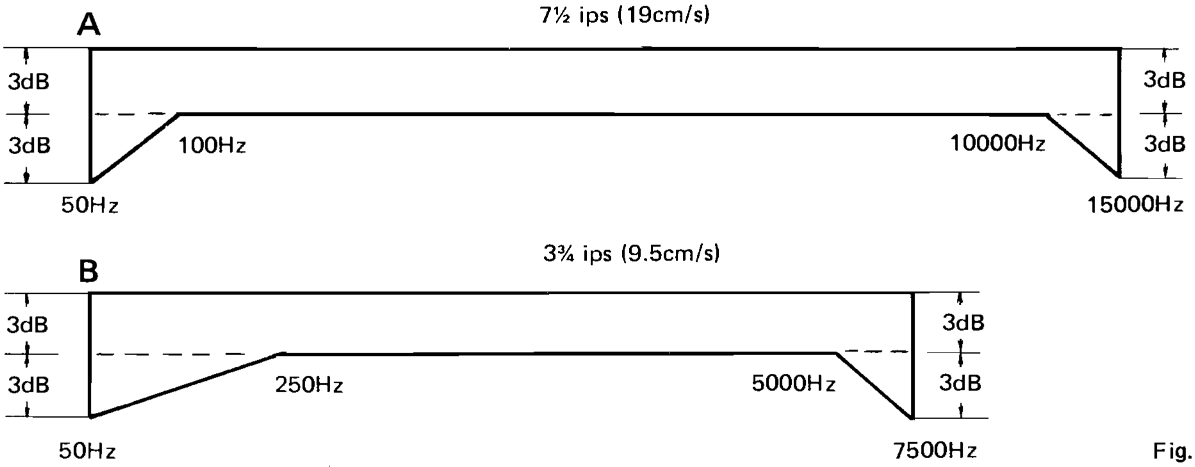


Fig. 18

8. LINE VOLTAGE SELECTION AND FUSE

- SWITCHING LINE VOLTAGE SETTING AND FUSE

  To remove the fuse, turn the fuse cap located on the line voltage selector switch in the direction indicated by the arrow, then remove the fuse plug from the unit. Put the fuse plug back so that the proper line voltage marking can be seen through the cut on the edge of the plug. Whenever the position of the selector switch is changed, check the rating of the fuse. A 0.5-ampere fuse is to be used for either 220V or 240V operation and a 1-ampere fuse for 110V, 117V or 130V operation. If the rating of the fuse is correct, replace cap. (Refer to Fig. 19).

- FUSE REPLACEMENT

  If the fuse blows, remove the fuse cap and replace the fuse with a new one.

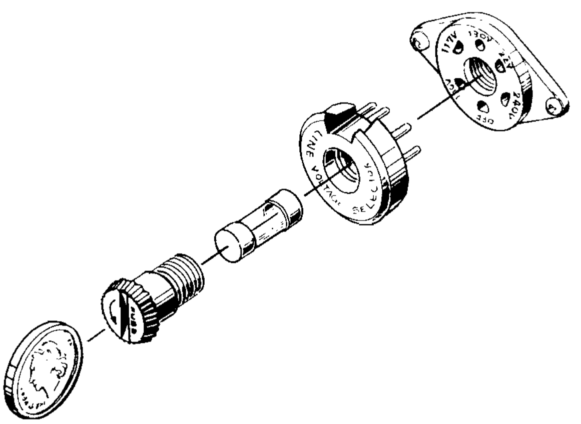


Fig. 19

9. SELECTION OF POWER LINE FREQUENCY

1) Remove the front panel by making reference to the item of DISASSEMBLY on page 7.
2) Remove the drive belt and the take-up belts from the motor pulley.
3) Remove the screw which secures the motor pulley and changes the pulley.
   Note: There is a groove provided on the pulley for 60 Hz.
4) Secure the motor pulley for 50 Hz or 60 Hz to the motor shaft temporarily. Place the motor pulley about 1/16"(2mm) from the chassis as shown in Fig. 21 and tighten it to the motor shaft by the setscrew.
5) Load the drive belt and the take-up belt. Operate the unit in both directions and see if the speed selector knob functions correctly.
6) If oil or grease is adhered on the drive belt or the take-up belts, wipe it clean with pure alcohol.
7) Change the connection of the MP (phase-shift) capacitor.
   *When changing 50 Hz to 60 Hz
   Open the connection between the terminals of 1μF and 3μF, and leave the 3μF only.
   *When changing 60Hz to 50Hz
   Connect the 1 μF and 3 μF in parallel obtain a total of 4 μF.

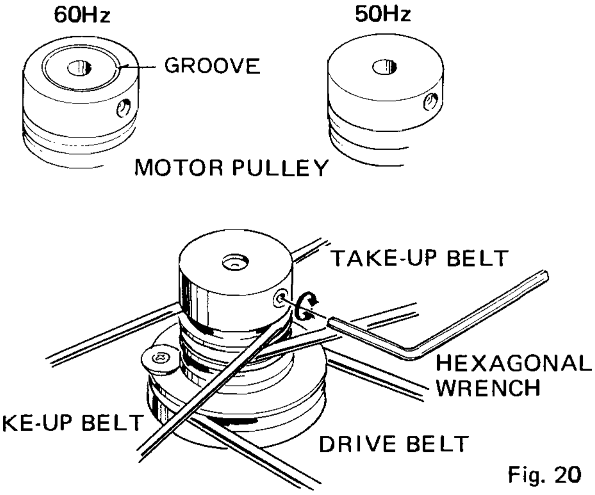

60Hz
50Hz
GROOVE
MOTOR PULLEY
TAKE-UP BELT
HEXAGONAL WRENCH
TAKE-UP BELT
DRIVE BELT

Fig. 20

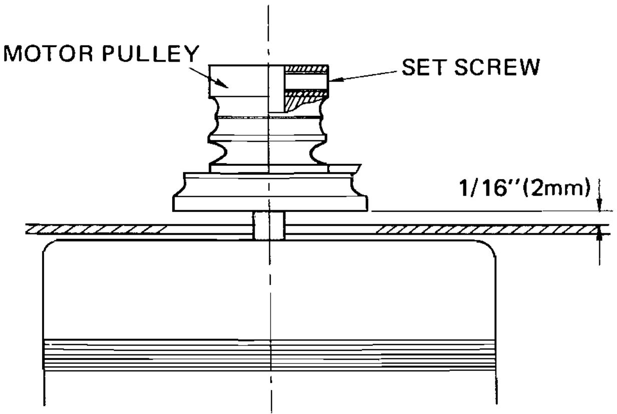
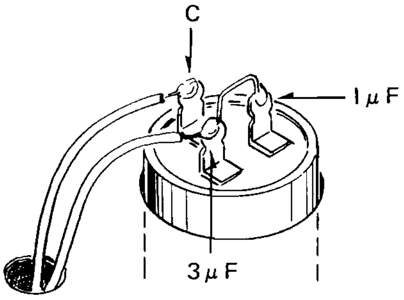

MOTOR PULLEY
SET SCREW
1/16"(2mm)

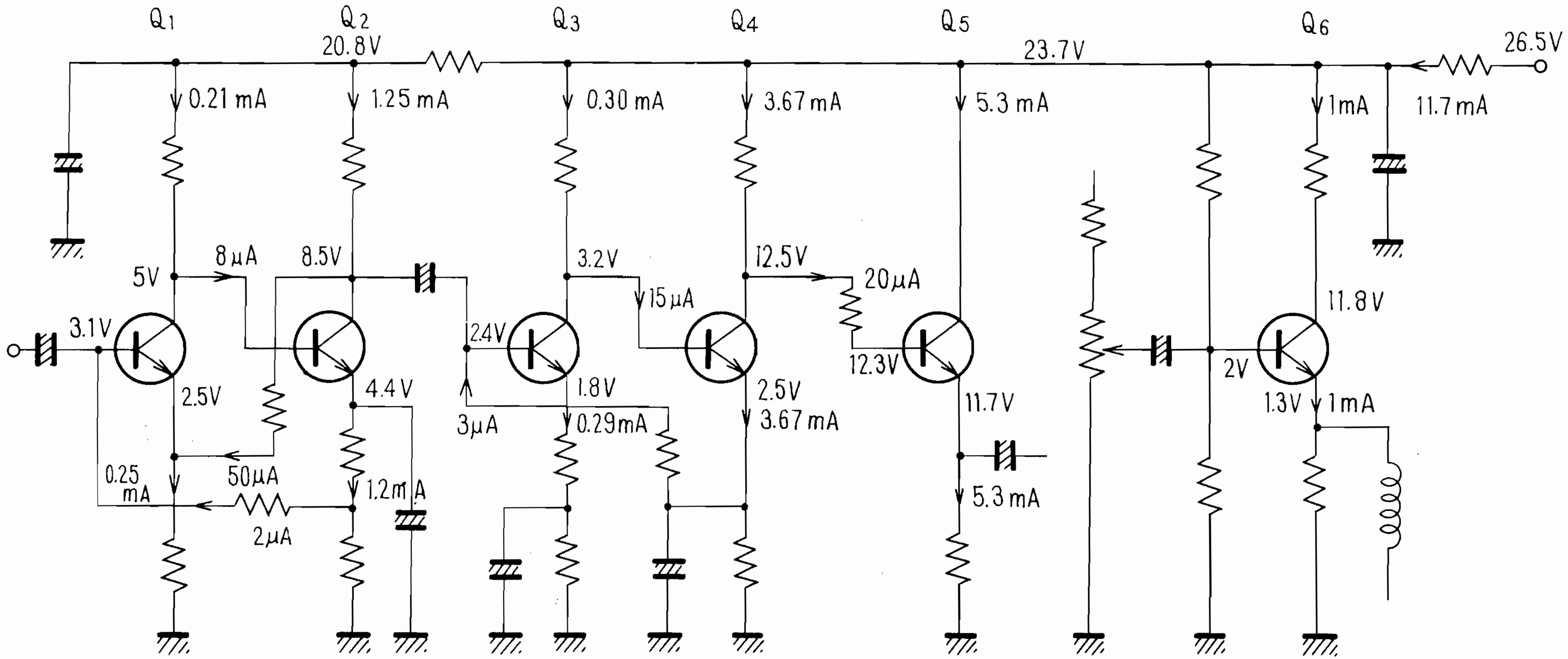
Fig. 21



MP (phase-shift) CAPACITOR

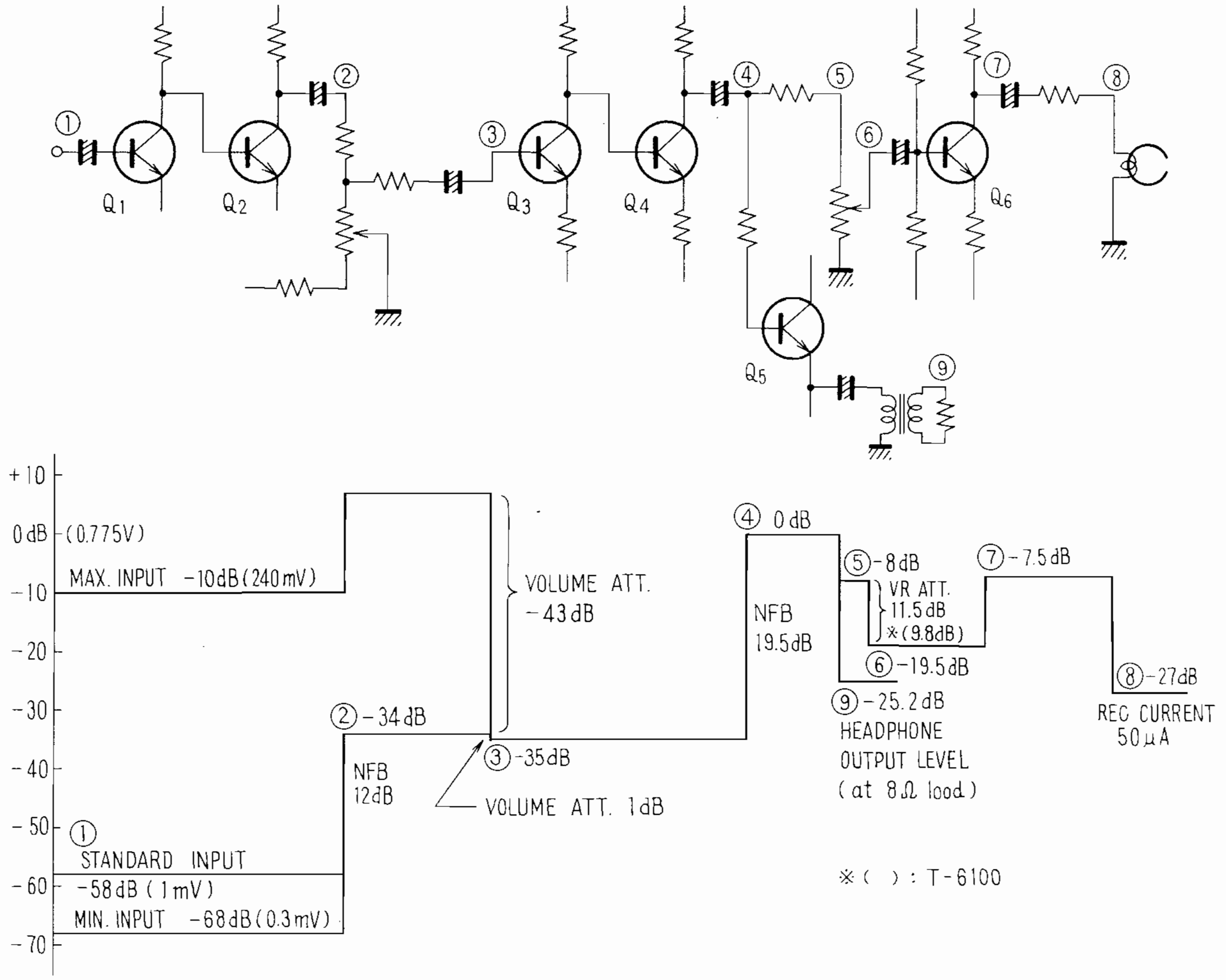
Fig. 22

10. CURRENT AND VOLTAGE DIAGRAM

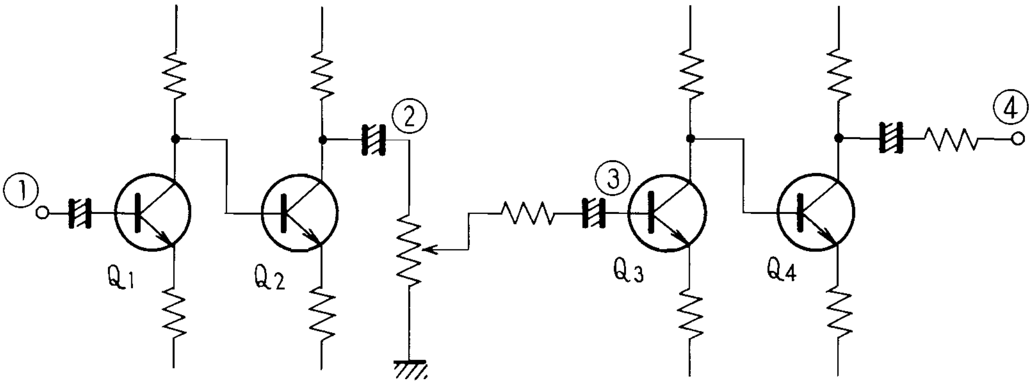

Q1
Q2
Q3
Q4
Q5
Q6
20.8V
23.7V
26.5V
0.21 mA
1.25 mA
0.30 mA
3.67 mA
5.3 mA
1mA
11.7 mA
5V
8 μA
8.5V
3.2V
12.5V
20μA
11.8V
3.1V
15 μA
2.4V
12.3V
2V
2.5V
4.4 V
1.8V
2.5V
3.67 mA
11.7V
1.3V
1mA
3μA
0.29mA
0.25 mA
50μA
1.2mA
5.3 mA
2μA

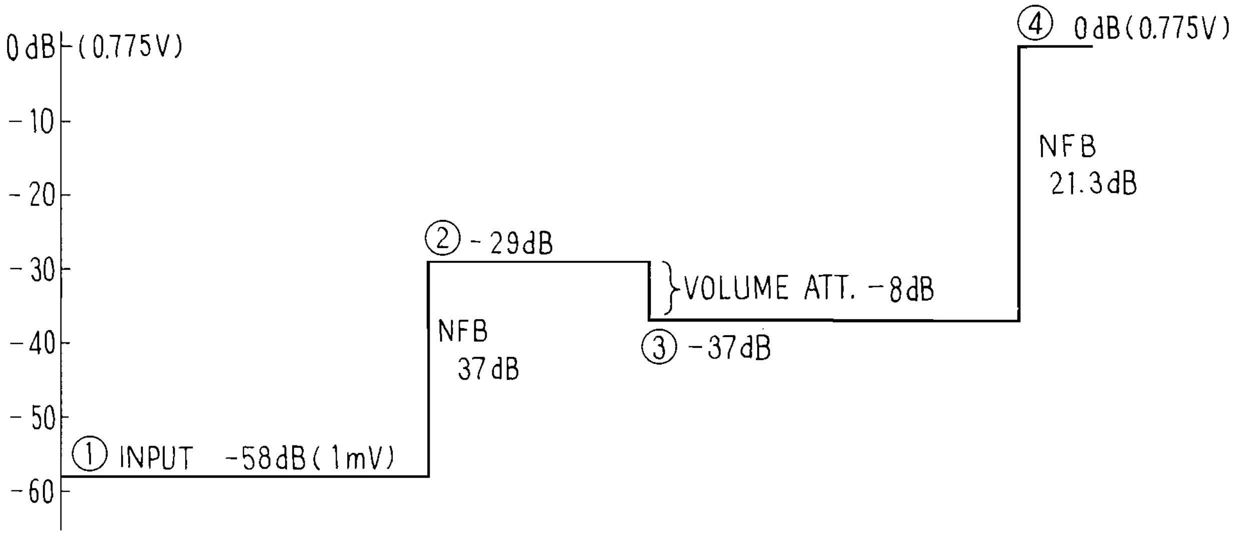
11. LEVEL DIAGRAMS

RECORDING

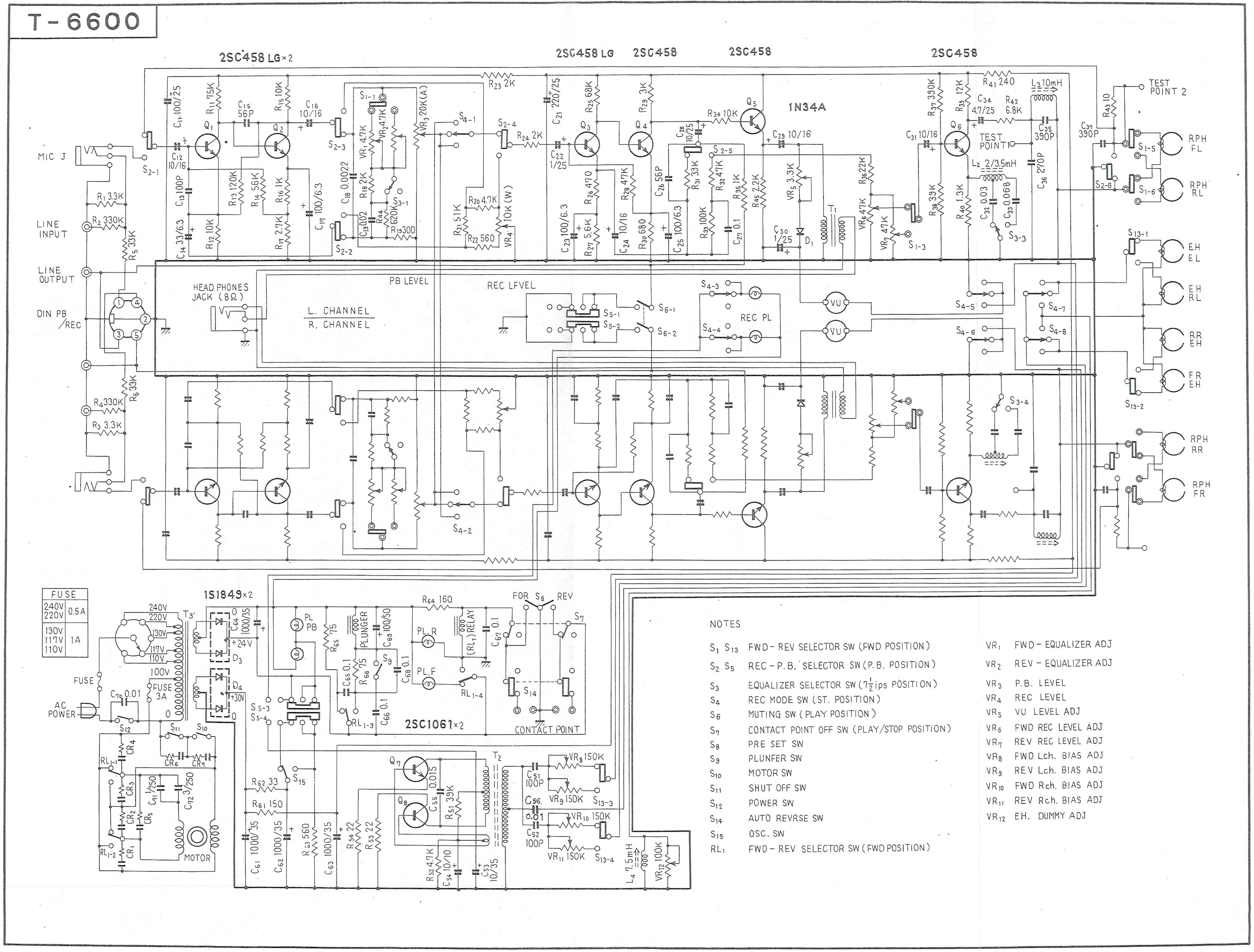

①
②
③
④
⑤
⑥
⑦
⑧
⑨
Q1
Q2
Q3
Q4
Q5
Q6
+10
0 dB (0.775V)
-10
-20
-30
-40
-50
-60
-70
MAX. INPUT -10dB (240mV)
VOLUME ATT. -43dB
④ 0 dB
⑤ -8dB
⑦ -7.5dB
VR ATT. 11.5dB ※(9.8dB)
NFB 19.5dB
⑥ -19.5dB
⑧ -27dB
② -34dB
⑨ -25.2dB HEADPHONE OUTPUT LEVEL (at 8Ω load)
REC CURRENT 50μA
③ -35dB
NFB 12dB
VOLUME ATT. 1dB
① STANDARD INPUT -58dB (1mV)
MIN. INPUT -68dB (0.3mV)
※( ) : T-6100

PLAYBACK


①
②
③
④
Q1
Q2
Q3
Q4


0dB (0.775V)
-10
-20
-30
-40
-50
-60
① INPUT -58dB (1mV)
NFB 37dB
② -29dB
VOLUME ATT. -8dB
③ -37dB
NFB 21.3dB
④ 0dB (0.775V)

12. SCHEMATIC DIAGRAMS AND PRINTED CIRCUIT BOARDS

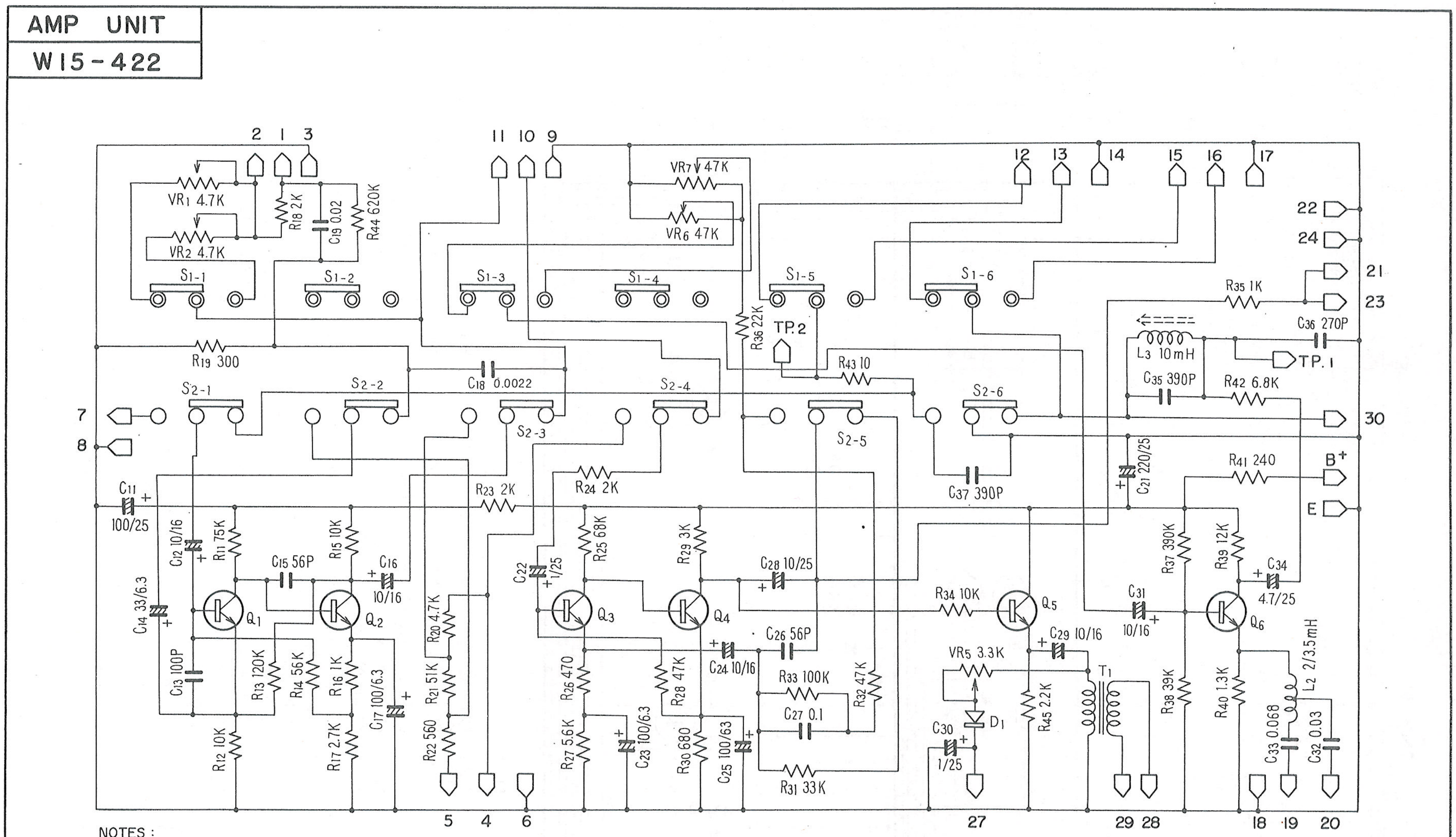

T-6600
2SC458 LG×2
2SC458 LG
2SC458
2SC458
2SC458
1N34A
MIC J
LINE INPUT
LINE OUTPUT
DIN PB /REC
R1 3.3K
R2 330K
R5 33K
R6 33K
R4 330K
R3 3.3K
HEAD PHONES JACK (8Ω)
PB LEVEL
REC LFVEL
L. CHANNEL
R. CHANNEL
REC PL
VU
TEST POINT 2
TEST POINT
RPH FL
RPH RL
EH EL
EH RL
RR EH
FR EH
RPH RR
RPH FR
FUSE
240V 220V 0.5A
130V 117V 110V 1A
AC POWER
1S1849×2
+24V
+30V
PL PB
PLUNGER
RELAY
PL R
PL F
FOR S8 REV
CONTACT POINT
2SC1061×2
MOTOR
T2
VR8 150K
VR9 150K
VR10 150K
VR11 150K
VR12 100K
L4 1.5mH

NOTES

S_1 S_{13}	FWD - REV SELECTOR SW (FWD POSITION)
S_2 S_5	REC - P.B. SELECTOR SW (P.B. POSITION)
S_3	EQUALIZER SELECTOR SW ($7\frac{1}{2}$ips POSITION)
S_4	REC MODE SW (ST. POSITION)
S_6	MUTING SW (PLAY POSITION)
S_7	CONTACT POINT OFF SW (PLAY/STOP POSITION)
S_8	PRE SET SW
S_9	PLUNFER SW
S_{10}	MOTOR SW
S_{11}	SHUT OFF SW
S_{12}	POWER SW
S_{14}	AUTO REVRSE SW
S_{15}	OSC. SW
RL_1	FWD - REV SELECTOR SW (FWD POSITION)

VR_1	FWD - EQUALIZER ADJ
VR_2	REV - EQUALIZER ADJ
VR_3	P.B. LEVEL
VR_4	REC LEVEL
VR_5	VU LEVEL ADJ
VR_6	FWD REC LEVEL ADJ
VR_7	REV REC LEVEL ADJ
VR_8	FWD Lch. BIAS ADJ
VR_9	REV Lch. BIAS ADJ
VR_{10}	FWD Rch. BIAS ADJ
VR_{11}	REV Rch. BIAS ADJ
VR_{12}	EH. DUMMY ADJ

AMPLIFIER UNIT (W15-422)


AMP UNIT
W15-422
VR1 4.7K
VR2 4.7K
R18 2K
C19 0.02
R44 620K
VR7 47K
VR6 47K
S1-1
S1-2
S1-3
S1-4
S1-5
S1-6
S2-1
S2-2
S2-3
S2-4
S2-5
S2-6
R19 300
C18 0.0022
R36 22K
TP.2
R43 10
R35 1K
L3 10mH
C36 270P
TP.1
C35 390P
R42 6.8K
C37 390P
C21 220/25
R41 240
B+
E
C11 100/25
C12 10/16
R11 75K
C15 56P
R15 10K
C16 10/16
C14 33/6.3
C13 100P
R13 120K
R14 56K
R16 1K
C17 100/6.3
R12 10K
R17 2.7K
R23 2K
R24 2K
R20 4.7K
R21 51K
R22 560
C22 1/25
R25 68K
R29 3K
C28 10/25
R26 470
R27 5.6K
C23 100/6.3
R28 47K
R30 680
C25 100/63
C24 10/16
C26 56P
R33 100K
C27 0.1
R32 47K
R31 33K
R34 10K
VR5 3.3K
C29 10/16
C30 1/25
D1
R45 2.2K
T1
C31 10/16
R37 390K
R38 39K
R39 12K
C34 4.7/25
R40 1.3K
C33 0.068
L2 2/3.5mH
C32 0.03
Q1
Q2
Q3
Q4
Q5
Q6
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
27
28
29
30

NOTES :

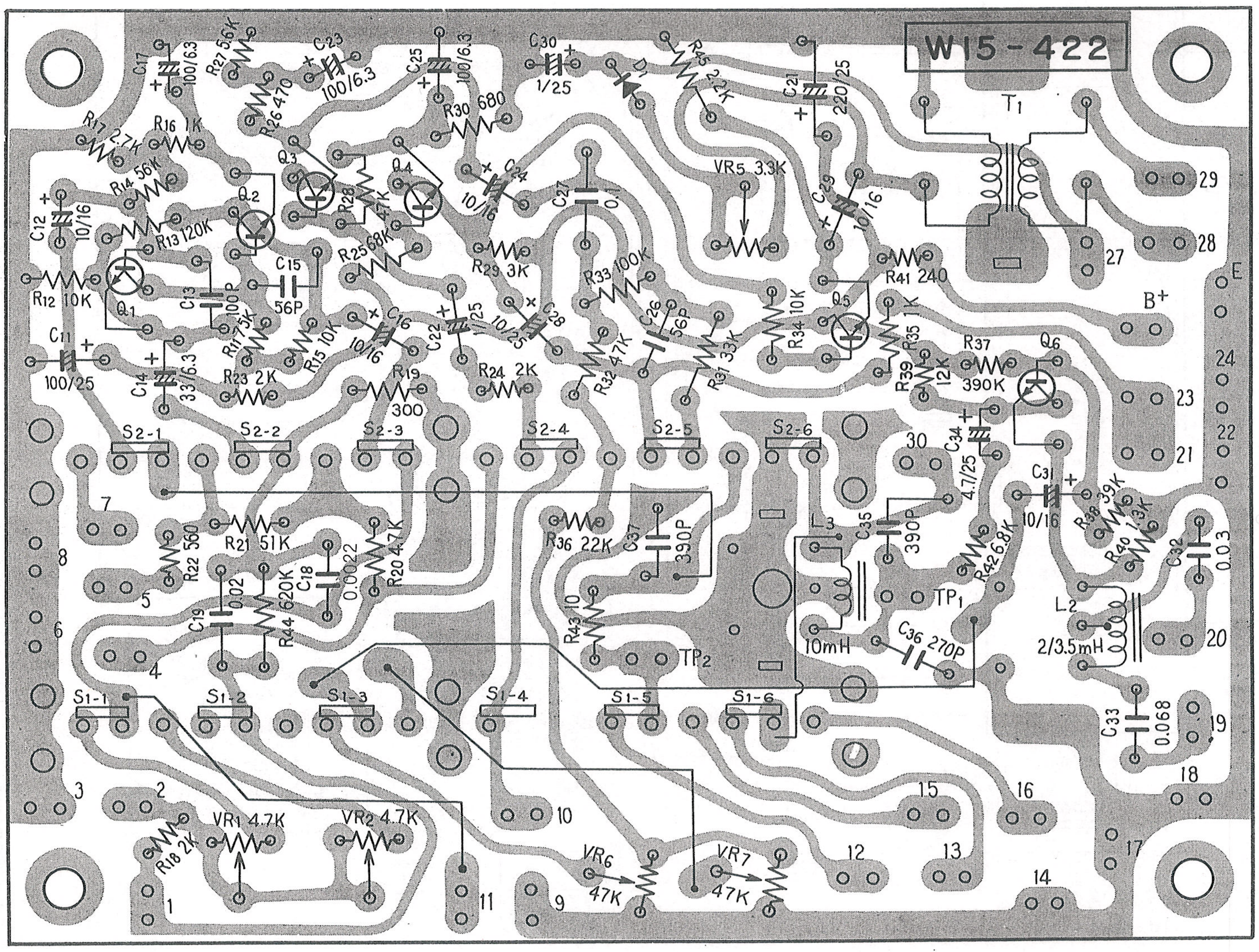
SEMICONDUCTORS

$Q_1 \sim Q_3$	2SC458 LG	B or C
$Q_4 \sim Q_6$	2SC458	C or D
D_1	IN34A	

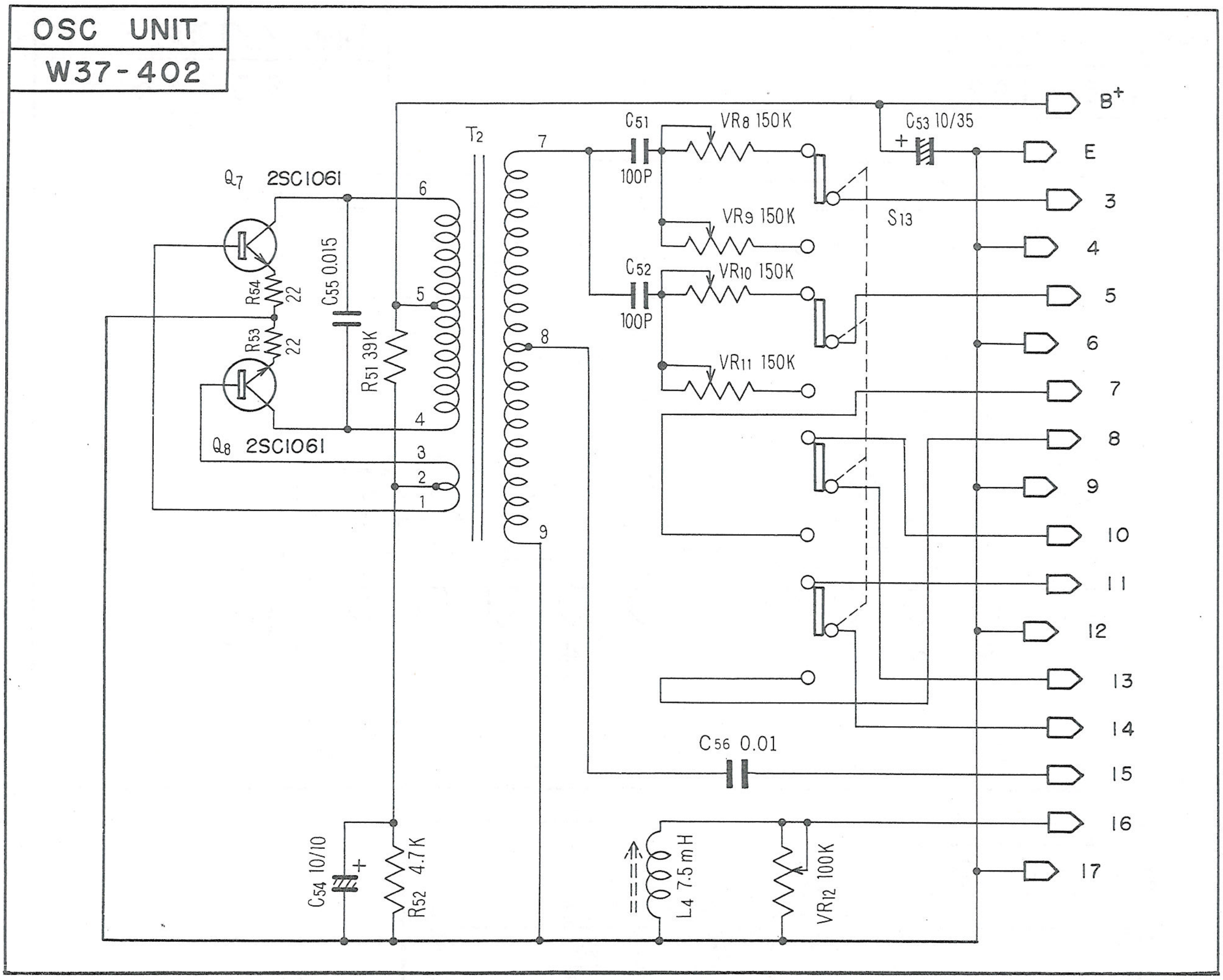
SWITCHES

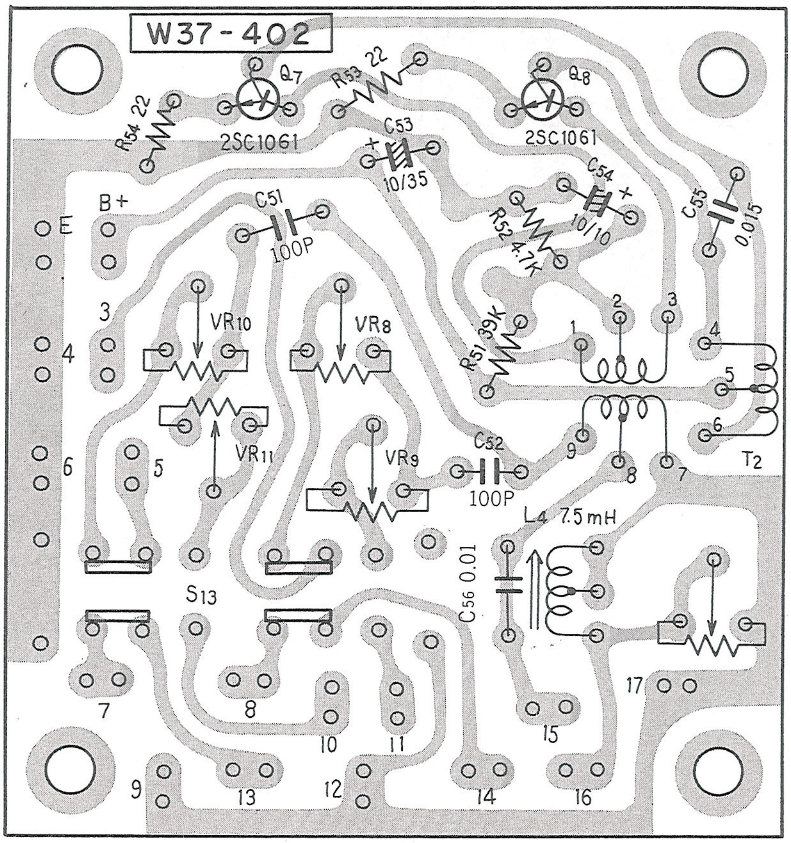
S_1 FWD - REV SELECTOR SW.

S_2 REC - P.B. SELECTOR SW.

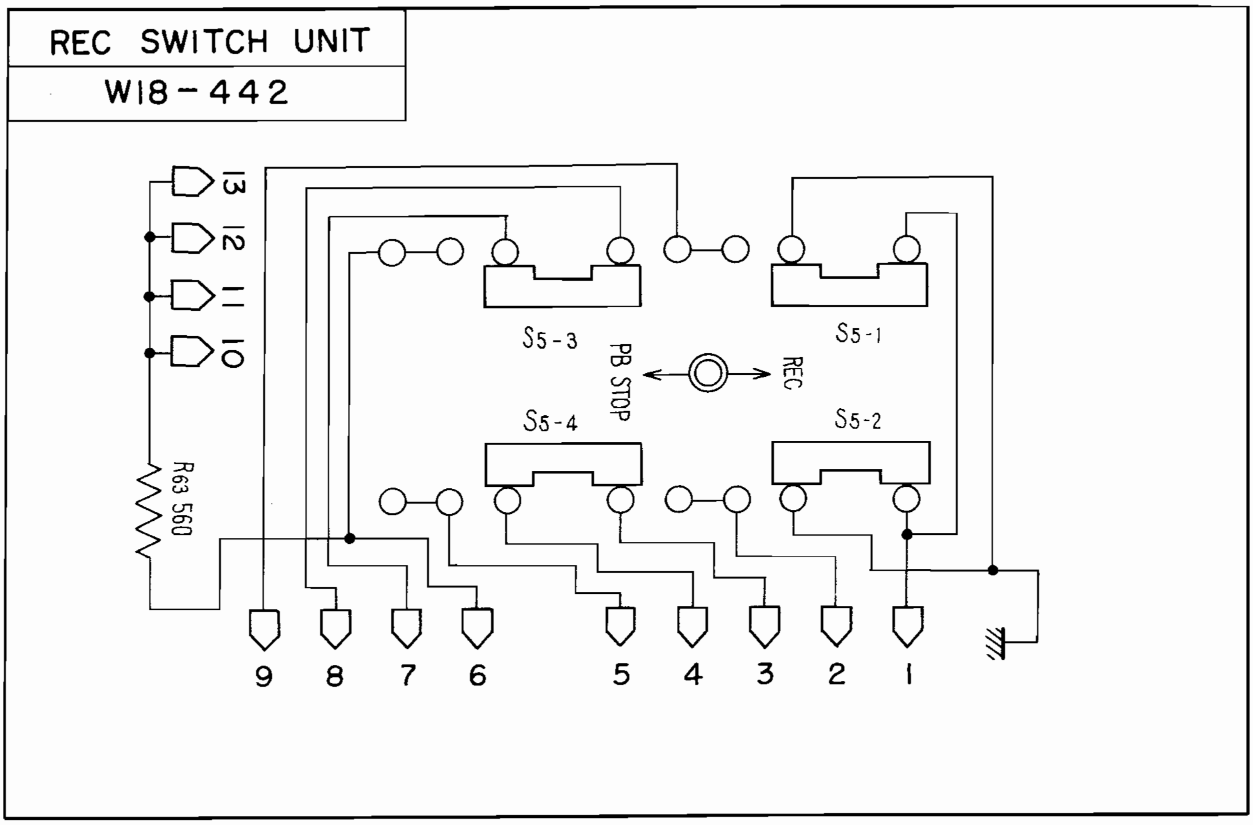

W15-422
T1
VR5 3.3K
VR1 4.7K
VR2 4.7K
VR6 47K
VR7 47K
S1-1
S1-2
S1-3
S1-4
S1-5
S1-6
S2-1
S2-2
S2-3
S2-4
S2-5
S2-6
TP1
TP2
L2 2/3.5mH
L3 10mH
B+
E

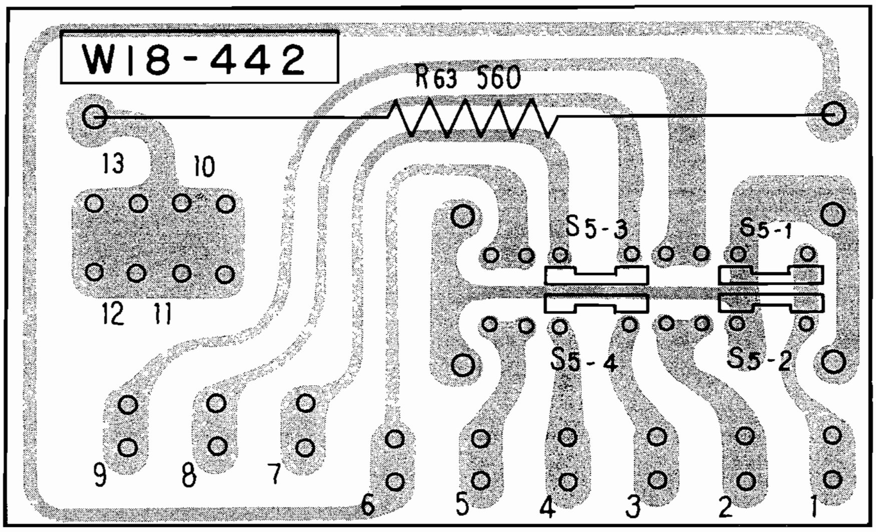
OSC. UNIT (W37-402)


OSC UNIT
W37-402
Q7 2SC1061
Q8 2SC1061
R54 22
R53 22
C55 0.015
R51 39K
T2
1
2
3
4
5
6
7
8
9
C51 100P
VR8 150K
VR9 150K
C52 100P
VR10 150K
VR11 150K
C53 10/35
S13
B+
E
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
C56 0.01
C54 10/10
R52 4.7K
L4 7.5mH
VR12 100K

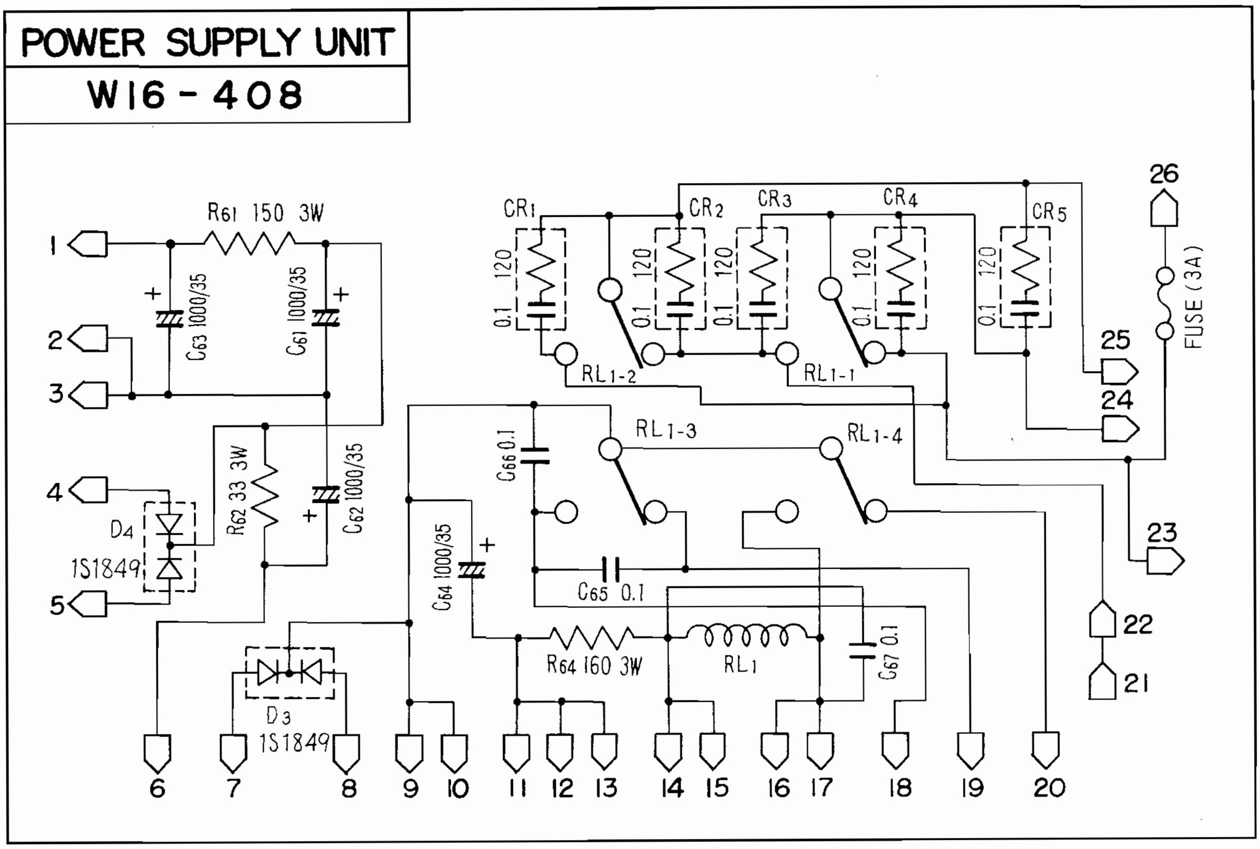

W37-402
Q7
R53 22
Q8
R54 22
2SC1061
C53
10/35
2SC1061
C54
10/10
R52 4.7K
C55
0.015
B+
E
C51
100P
3
4
VR10
VR8
R51 39K
1
2
3
4
5
6
VR11
VR9
C52
100P
9
8
7
T2
6
5
L4 7.5mH
C56 0.01
S13
17
7
8
10
11
15
9
13
12
14
16

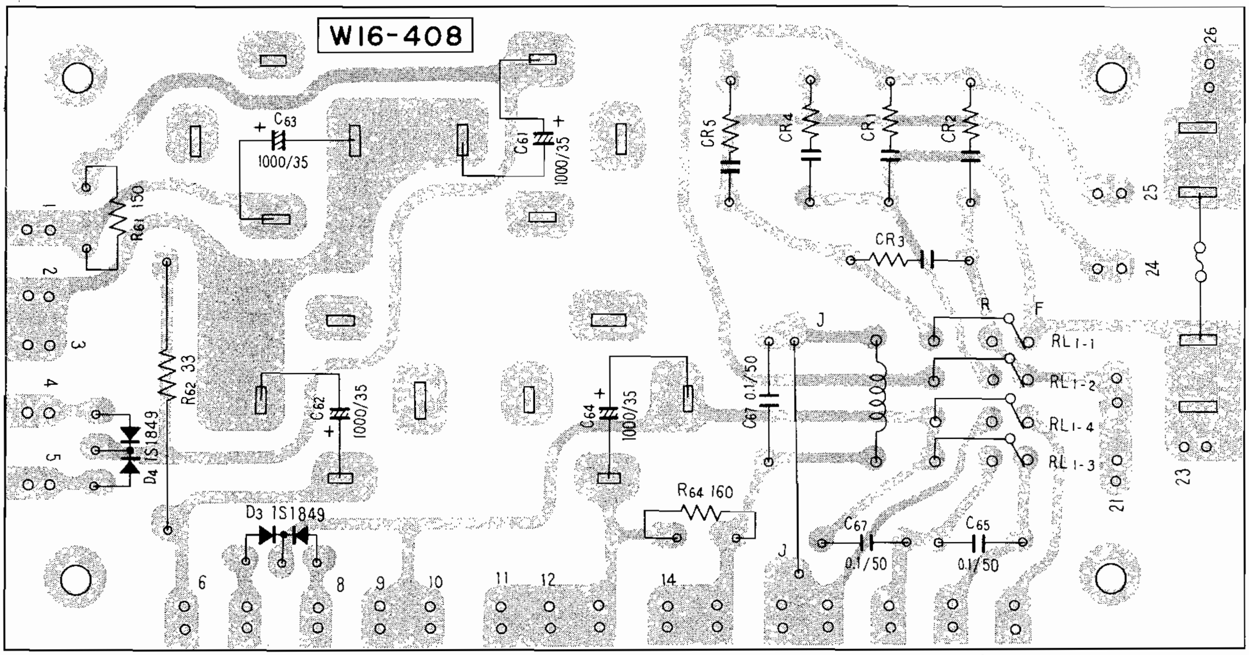
REC. SWITCH UNIT (W18-442)


REC SWITCH UNIT
W18-442
13
12
11
10
R63 560
S5-3
S5-1
PB STOP
REC
S5-4
S5-2
9
8
7
6
5
4
3
2
1


W18-442
R63 560
13
10
12
11
S5-3
S5-1
S5-4
S5-2
9
8
7
6
5
4
3
2
1

POWER SUPPLY UNIT (W16-408)


POWER SUPPLY UNIT
W16-408
R61 150 3W
C63 1000/35
C61 1000/35
R62 33 3W
C62 1000/35
D4
1S1849
D3
1S1849
C64 1000/35
C66 0.1
C65 0.1
R64 160 3W
RL1
C67 0.1
CR1
CR2
CR3
CR4
CR5
120
0.1
RL1-2
RL1-1
RL1-3
RL1-4
FUSE (3A)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26


W16-408
C63
1000/35
C61
1000/35
R61 150
R62 33
C62
1000/35
D4 1S1849
D3 1S1849
C64
1000/35
R64 160
C67 0.1/50
C67
0.1/50
C65
0.1/50
CR5
CR4
CR1
CR2
CR3
J
R
F
RL1-1
RL1-2
RL1-4
RL1-3
1
2
3
4
5
6
8
9
10
11
12
14
21
23
24
25
26

13. ELECTRIC PARTS LIST

CAPACITORS

In μF, unless otherwise noted. p=pF

Symbol	Description	Part No.	
C11	Electrolytic 100 25V	CEMX 100MF 25V	
C12	Electrolytic 10 16V	CEMX 10MF 16V	
C13	Styrol 100p 50V	CQSA 101K 50	
C14	Electrolytic 33 6.3V	CEMX 33MF 6R3V	
C15	Styrol 56p 50V	CQSA 560K 50	
C16	Electrolytic 10 16V	CEMX 10MF 16V	
C17	Electrolytic 100 6.3V	CEMX 100MF 6R3V	
C18	Mylar 0.0022 50V	CQMA 222K 50	
C19	Mylar 0.02 50V	CQMA 203K 50	
C20			
C21	Electrolytic 220 25V	CEMX 220MF 25V	
C22	Electrolytic 1 25V	CEMX 1MF 25V	
C23	Electrolytic 100 6.3V	CEMX 100MF 6R3V	
C24	Electrolytic 10 16V	CEMX 10MF 16V	
C25	Electrolytic 100 6.3V	CEMX 100MF 6R3V	
C26	Styrol 56p 50V	CQSA 560K 50	
C27	Mylar 0.1 50V	CQMA 104K 50	
C28	Electrolytic 10 25V	CEMX 10MF 25V	
C29	Electrolytic 10 16V	CEMX 10MF 16V	
C30	Electrolytic 1 25V	CEMX 1MF 25V	
C31	Electrolytic 10 16V	CEMX 10MF 16V	
C32	Mylar 0.03 50V	CQMA 303K 50	
C33	Mylar 0.068 50V	CQMA 683K 50	
C34	Electrolytic 4.7 25V	CEMX 4R7MF 25V	
C35	Styrol 390p 50V	CQSA 391K 50	
C36	Styrol 270p 50V	CQSA 271K 50	
C37	Styrol 390p 50V	CQSA 391K 50	
C51	Styrol 100p 50V	CQSA 101K 50	
C52	Styrol 100p 50V	CQSA 101K 50	
C53	Electrolytic 10 35V	CEMX 10MF 35V	
C54	Electrolytic 10 10V	CEMX 10MF 10V	
C55	Styrol 0.015 50V	CQSA 153K 50	
C56	Mylar 0.01 50V	CQMA 103K 50	
C61	Electrolytic 1000 35V	C52-068-0	
C62	Electrolytic 1000 35V	C52-068-0	
C63	Electrolytic 1000 35V	C52-068-0	
C64	Electrolytic 1000 35V	C52-068-0	
C65	Mylar 0.1 50V	CQMA 104K 50	
C66	Mylar 0.1 50V	CQMA 104K 50	
C67	Mylar 0.1 50V	CQMA 104K 50	
C68	Mylar 0.1 50V	CQMA 104K 50	
C69	Electrolytic 100 50V	CEMX 100MF 50V	
C70	Ceramic 0.01 D.C.1.4KV	C43-003-0	
C71	M.P. 1 250V	C22-403-0	
C72	M.P. 3 250V	C22-403-0	

RESISTORS

In Ω, 10% tolerance unless otherwise noted. k=kΩ

Symbol	Description	Part No.	
R1	Carbon film 3.3k	RF¼P 3R3K-K	
R2	Carbon film 330k	RF¼P 330K-K	
R3	Carbon film 3.3k	RF¼P 3R3K-K	
R4	Carbon film 330k	RF¼P 330K-K	
R5	Carbon film 33k	RF¼PS 33K-K	
R6	Carbon film 33k	RF¼PS 33K-K	
R11	Carbon film 75k	RF¼VS 75K-K	
R12	Carbon film 10k	RF¼VS 10K-K	
R13	Carbon film 120k	RF¼VS 120K-K	
R14	Carbon film 56k	RF¼PS 56K-K	
R15	Carbon film 10k	RF¼VS 10K-K	

Symbol	Description	Part No.	
R16	Carbon film 1k	RF¼VS 1K-K	
R17	Carbon film 2.7k	RF¼VS 2R7K-K	
R18	Carbon film 2k	RF¼VS 2K-K	
R19	Carbon film 300	RF¼VS 300-K	
R20	Carbon film 4.7k	RF¼VS 4R7K-K	
R21	Carbon film 51k	RF¼VS 51K-K	
R22	Carbon film 560	RF¼VS 560-K	
R23	Carbon film 2k	RF¼VS 2K-K	
R24	Carbon film 2k	RF¼VS 2K-K	
R25	Carbon film 68k	RF¼VS 68K-K	
R26	Carbon film 470	RF¼VS 470-K	
R27	Carbon film 5.6k	RF¼VS 5R6K-K	
R28	Carbon film 47k	RF¼VS 47K-K	
R29	Carbon film 3k	RF¼VS 3K-K	
R30	Carbon film 680	RF¼VS 680-K	
R31	Carbon film 33k	RF¼VS 33K-K	
R32	Carbon film 47k	RF¼VS 47K-K	
R33	Carbon film 100k	RF¼VS 100K-K	
R34	Carbon film 10k	RF¼VS 10K-K	
R35	Carbon film 1k	RF¼VS 1K-K	
R36	Carbon film 22k	RF¼VS 22K-K	
R37	Carbon film 390k	RF¼VS 390K-K	
R38	Carbon film 39k	RF¼VS 39K-K	
R39	Carbon film 12k	RF¼VS 12K-K	
R40	Carbon film 1.3k	RF¼VS 1R3K-K	
R41	Carbon film 240	RF¼VS 240-K	
R42	Carbon film 6.8k	RF¼VS 6R8K-K	
R43	Carbon film 10	RF¼VS 10-K	
R44	Carbon film 620k	RF¼VS 620K-K	
R45	Carbon film 2.2k	RF¼VS 2R2K-K	
R51	Carbon film 39k	RF¼VS 39K-K	
R52	Carbon film 4.7k	RF¼VS 4R7K-K	

Symbol	Description	Part No.	
R53	Carbon film 22	RF¼VS 22-K	
R54	Carbon film 22	RF¼VS 22-K	
R61	Carbon film 150	RF¼VS 150-K	
R62	Carbon film 33 ½W	RF½PS 33-K	
R63	Metal film 560 3W	R03P 560-K	
R64	Metal film 160 3W	R03P 160-K	
R65	Wire wound 75 10W	C91-851-0	
R66	Wire wound 75 10W	C91-851-0	

POTENTIOMETERS

Symbol	Description	Part No.	
VR1	4.7kΩ Semi-fixed, FWD. Equalizer Adj.	C92-051-0	
VR2	4.7kΩ Semi-fixed, REV. Equalizer Adj.	C92-051-0	
VR3	Playback Level Control	C87-401-A	
VR4	10kΩ, REC. Level Control	C81-433-A	
VR5	3.3kΩ Semi-fixed, VU Level Adj.	C92-402-0	
VR6	47kΩ Semi-fixed, FWD. REC. Level Adj.	C92-048-0	
VR7	47kΩ Semi-fixed, REV. REC. Level Adj.	C92-048-0	
VR8	150kΩ Semi-fixed, FWD. (L) Bias Adj.	C92-860-0	
VR9	150kΩ Semi-fixed, REV. (L) Bias Adj.	C92-860-0	
VR10	150kΩ Semi-fixed, FWD. (R) Bias Adj.	C92-860-0	
VR11	150kΩ Semi-fixed, REV. (R) Bias Adj.	C92-860-0	
VR12	100kΩ Semi-fixed, E.H. Dummy Adj.	C92-047-0	

SWITCHES

Symbol	Description	Part No.	
S1	FWD.-REV. Selector (Slide type)	S41-852-A	
S2	REC.-P.B. Selector (Slide type)	S41-852-A	
S3	Equalizer Selector	S14-401-0	
S4	REC. Mode Selector	S15-402-A	
S5	REC.-P.B. Selector	S41-855-0	

Symbol	Description	Part No.	
S6	Muting Switch	S48-856-B	
S7	Contact Point off Switch	S42-403-0	
S8	Preset Switch	S32-401-A	
S9	Plunger Switch	S48-855-0	
S10	Motor Switch	S21-851-0	
S11	Shut off Switch	S21-851-0	
S12	Power Switch	S31-851-0	
S13	FWD -REV. Selector (Slide type)	S41-856-A	
S14	Auto-Reverse Switch	S41-854-0	
S15	OSC. Switch	S21-418-0	

SEMICONDUCTORS

Symbol	Description	Part No.	
Q1	2SC485LG B or C Transistor		
Q2	2SC458LG B or C Transistor		
Q3	2SC458LG B or C Transistor		
Q4	2SC458 C or D Transistor		
Q5	2SC458 C or D Transistor		
Q6	2SC458 C or D Transistor		
Q7	2SC1061 B Transistor		
Q8	2SC1061 B Transistor		
D1	1N34A Diode		
D3	1S1849 Diode		
D4	1S1849 Diode		

COILS, TRANSFORMERS

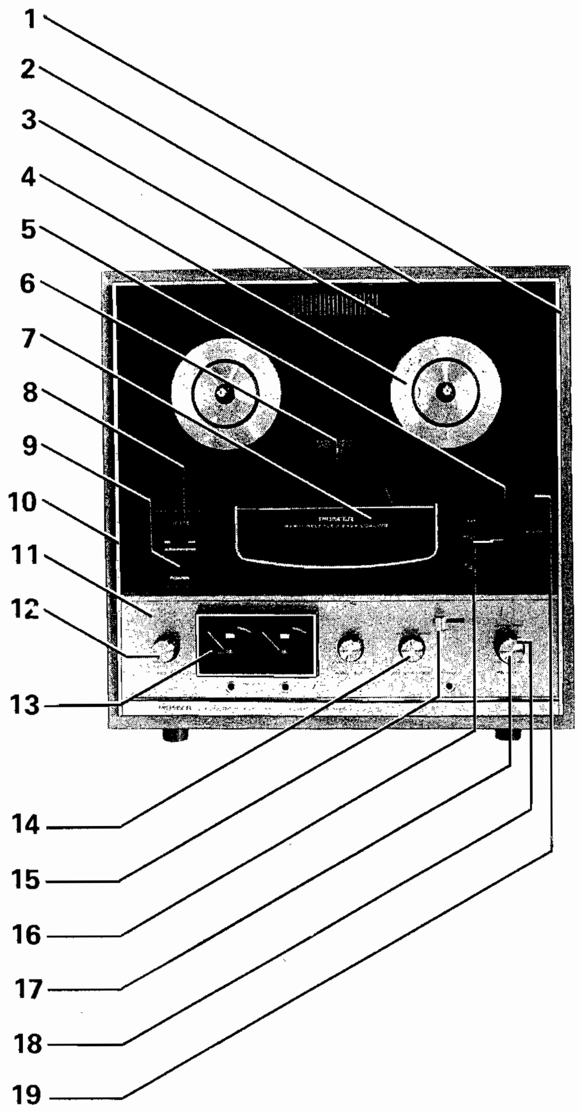
Symbol	Description	Part No.	
L2	Peaking Coil	T84-402-A	
L3	Trap Coil	T84-401-A	
L4	Dummy Coil	T84-403-A	
T1	Matching Transformer	T61-408-A	
T2	OSC. Coil	T83-403-B	
T3	Power Transformer	T52-413-A	

MISCELLANEOUS

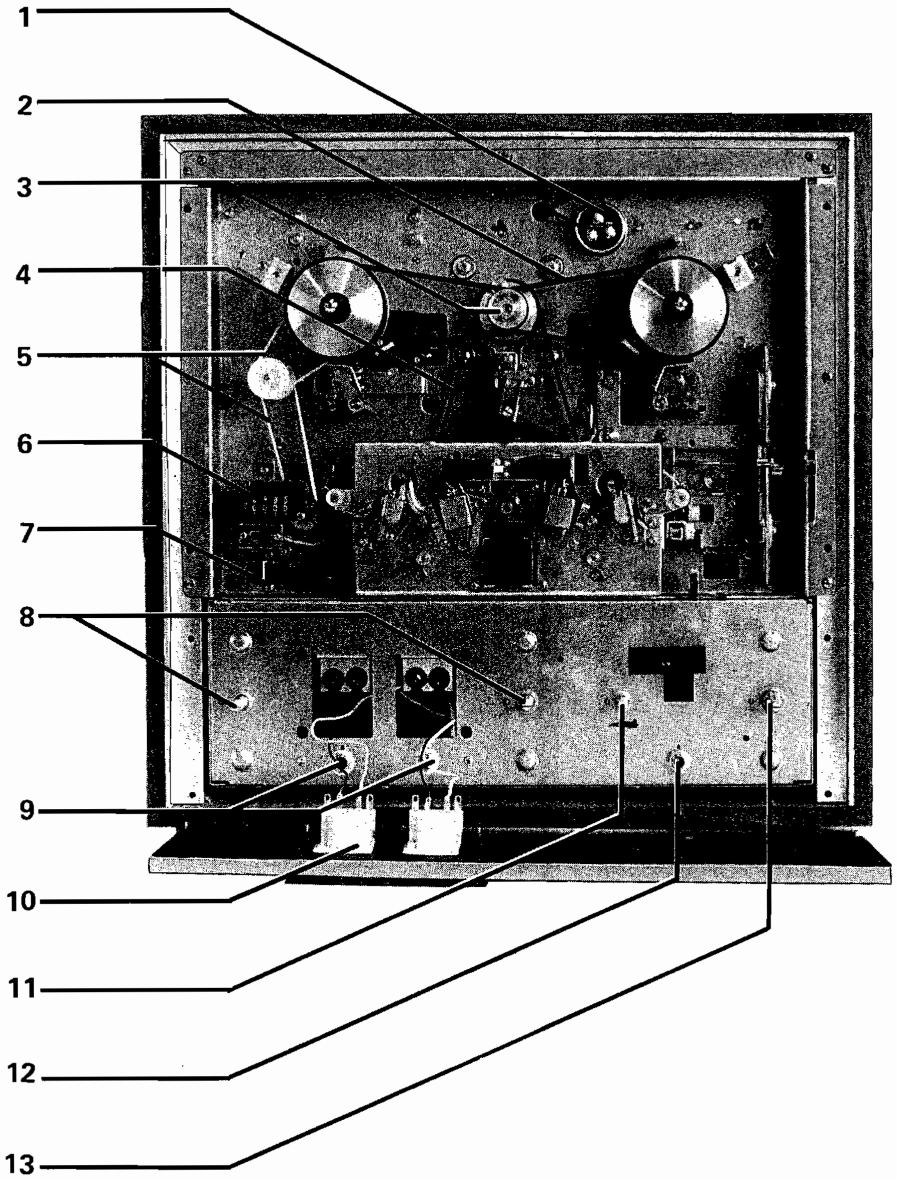
Symbol	Description	Part No.	
RL1	Relay (12V)	S61-853-0	
CR1	Spark Killer	W53-045-0	
CR2	Spark Killer	W53-045-0	
CR3	Spark Killer	W53-045-0	
CR4	Spark Killer	W53-045-0	
CR5	Spark Killer	W53-045-0	
CR6	Spark Killer	W53-045-0	
CR7	Spark Killer	W53-045-0	
	Motor	N11-852-A	
	Plunger	N15-852-0	
	Level Meter	A91-402-A	
	Microphone Jack	K72-024-0	
	Headphone Jack	K72-026-0	
	R.P. Head	P54-851-C	
	Erase Head	P53-402-0	
	Fuse 3A	E21-006-0	
	Fuse 0.5A	E21-007-0	
	Fuse 1A	E21-004-0	
	Line Voltage Selector	S11-018-0	
	AC Power Cord	D11-003-E	
	Pilot Lamp	E22-854-A	
	Pilot Lamp (Green)	E22-405-0	
	REC/P.B. Connector (DIN type)	K93-003-B	
	Line Output/line Input Jack	K21-010-D	

14. MECHANICAL PARTS LIST

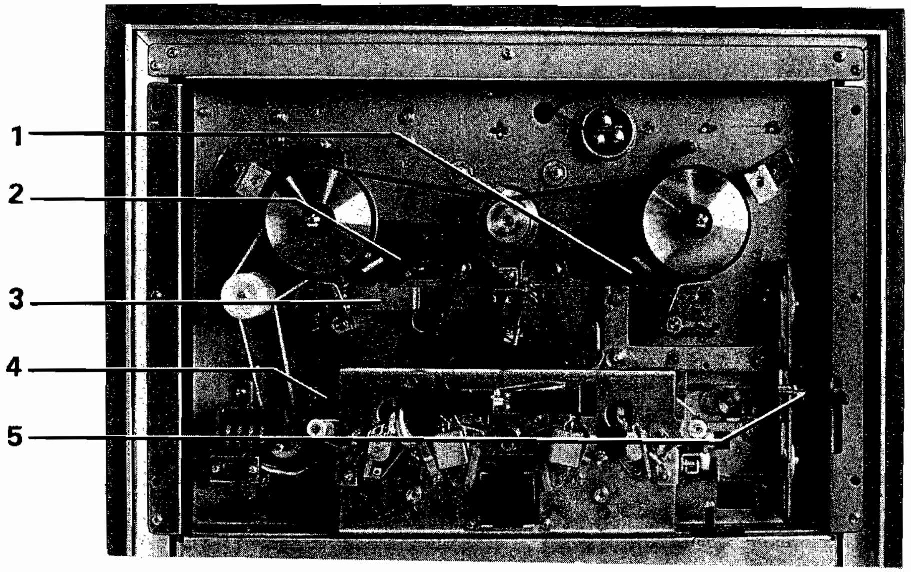
Key No.	Description	Part No.	
1	Sash (C)	A61-411-B	
2	Sash (B)	A61-410-B	
3	Panel assembly (Including key No. 4, 5 and 8)	E17-448-0	
4	Reel base escutcheon	A67-402-A	
5	Finger rest	A66-852-0	
6	Speed selector knob	A12-406-0	
7	Head housing assembly	E17-413-0	
8	Counter Escutcheon	A67-403-A	
9	Power switch button	A17-402-0	
10	Sash (A)	A61-409-B	
11	Amplifier panel	A62-404-B	
12	Rec. level control knob	A12-403-A	
13	Level meter	A91-402-B	
14	Rec. mode switch knob	A12-403-A	
15	Rec. lever knob	A18-401-0	
16	Function lever knob	A17-854-A	
17	Playback level control knob (foremost)	A12-409-A	
18	Playback level control knob	A12-412-A	
19	Pause lever knob	A18-606-0	
	Lock spring for REC. & PAUSE levers	B32-679-0	

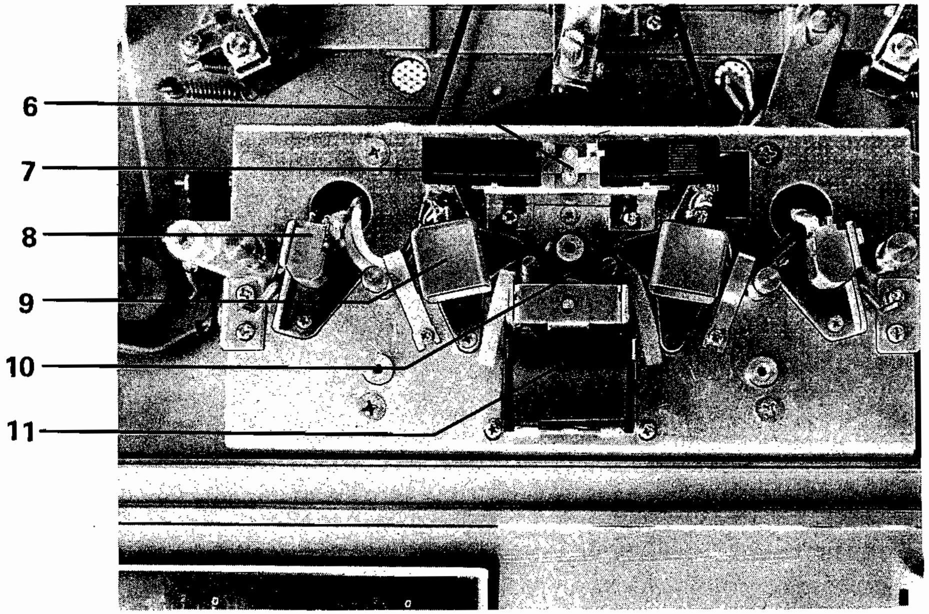


Symbol	Description	Part No.	
1	MP capacitor	C22-403-0	
2	Take-up belt	~~N28-852-A~~	REB-05 /
3	Motor pulley 50Hz (60Hz)	W71-416-A (W71-419-A)	
4	Drive belt	N28-851-0	
5	Counter belt	N28-853-0	
6	Tape counter	A92-401-0	
7	Power switch	S31-851-0	
8	Rec. level control (Potentiometer)	C81-433-A	
9	Mic. jack	K72-024-0	
10	Level meter	A91-402-B	
11	Rec. mode switch	S15-402-A	
12	Headphone jack	K72-026-0	
13	Playback level control (Potentiometer)	C87-401-A	

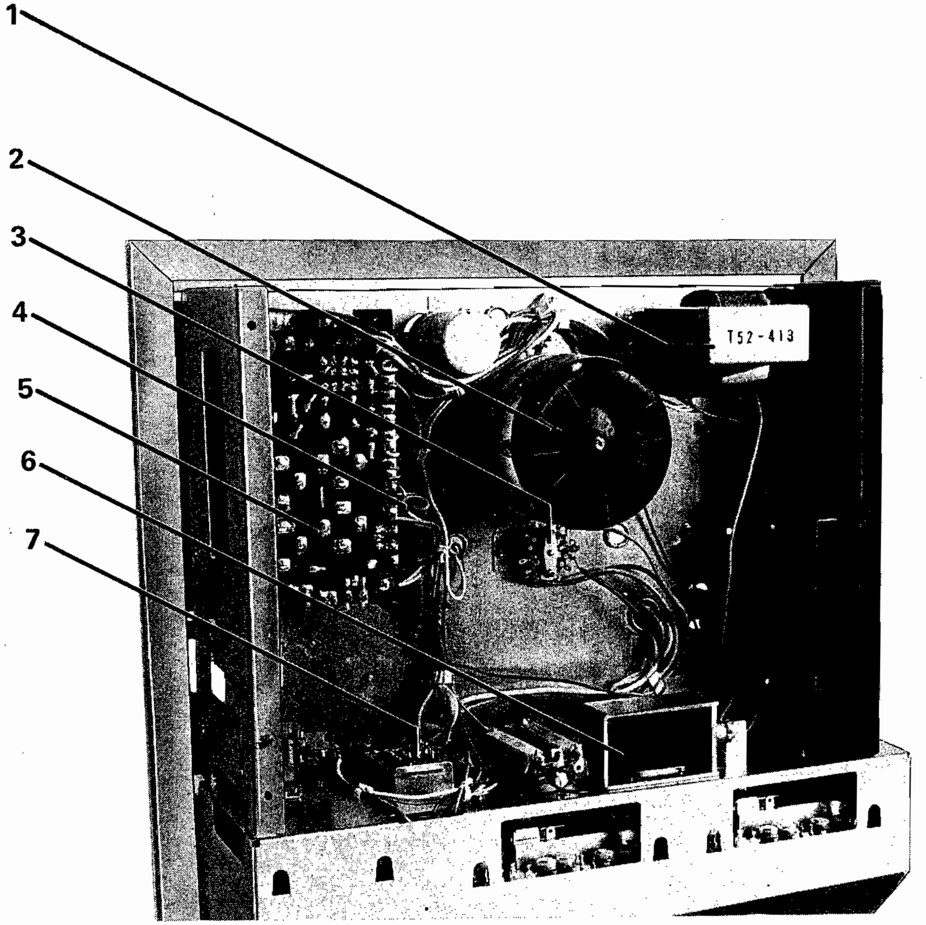


Key No.	Description	Part No.	
1	OSC. switch	S21-418-0	
2	Motor switch	S21-851-0	
3	Fast-forward cam	W72-477-0	
4	Shut-off switch	S21-851-0	
5	Pause cam lever	N81-404-0	
6	Push switch assembly	S32-401-A	
7	Push button assembly	A81-402-0	
8	E. head	P53-402-0	
9	R.P. head	P54-851-C	
10	Pinch roller assembly	E17-511-0	
11	Pinch cover assembly	W72-864-0	

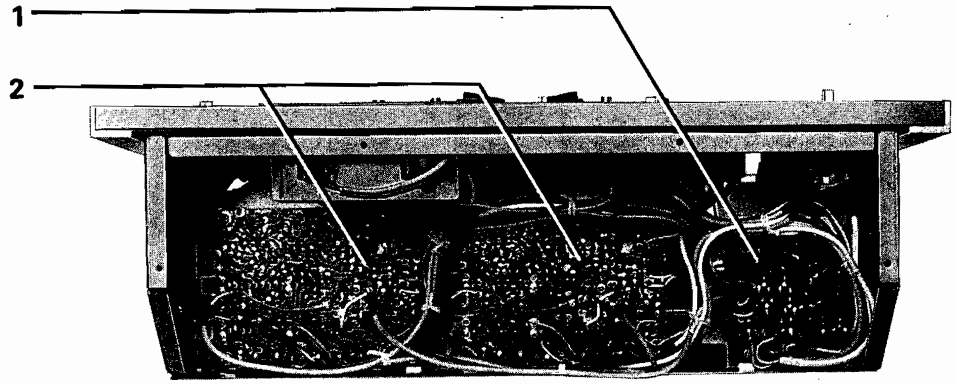


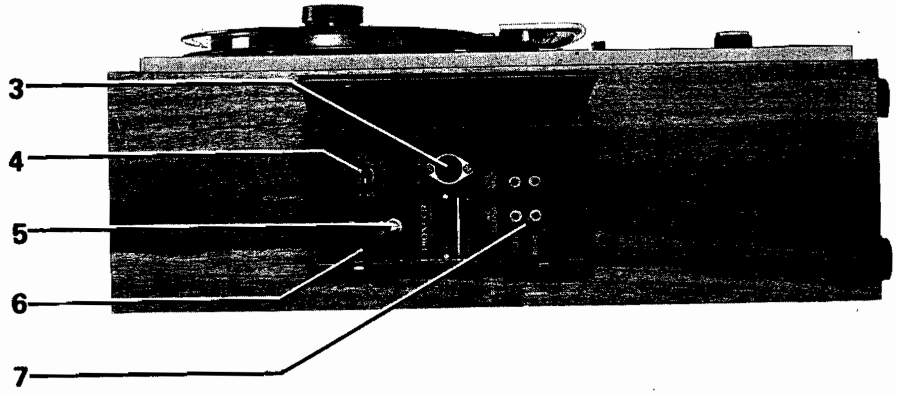


Key No.	Description	Part No.	
1	Power transformer	T52-413-B	
2	Motor	N11-852-A	
3	Speed selector switch	S14-401-0	
4	Reverse cancel switch	S42-403-0	
5	Power supply unit	W16-408-0	
6	Plunger	N15-852-0	
7	Rec. switch board assembly	W18-442-0	



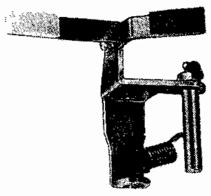
Key No.	Description	Part No.	
1	OSC. unit assembly	W37-402-0	
2	Amplifier unit assembly	W15-422-B	
3	Rec./P.B. connector (DIN type)	K93-003-B	
4	Line voltage selector & fuse	S11-018-0	
5	Screw for ground terminal	B11-012-A	
6	AC power cord	D11-003-E	
7	4p pin-jack	K21-001-D	





Key No.	Description	Part No.	
1	Tension adjusting plate assembly	W72-871-B	
2	Brake arm A assembly	RXA-001-0	
3	Brake arm B assembly	RXA-002-0	
4	Aux.-brake A assembly	W72-886-A	
5	Aux.-brake B assembly	W72-887-A	
6	Speed selector cam A	N62-521-0	
7	Speed selector cam B assembly	E17-512-0	
8	Reel base shaft	N22-853-B	
9	Take-up pulley spacer	N51-866-0	
10	Take-up pulley A assembly	E17-401-0	
11	Take-up pulley B assembly	E17-402-0	
12	Reel base pulley assembly	E17-408-0	
13	Reel base assembly	E17-403-0	
14	Capstan assembly	W71-442-0	
15	Bearing for capstan	W71-852-A	
16	Contact lever pole assembly	W73-409-B	
17	Pinch roller return spring	B31-858-A	
18	Pinch roller arm raising metal A	N62-528-0	
19	Pinch roller arm raising metal B assembly	E17-409-0	
20	Pinch roller assembly	E17-511-0	

1

2


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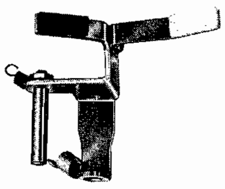

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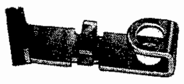

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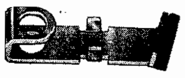

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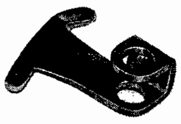

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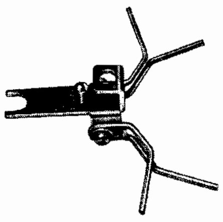

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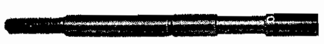

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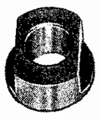

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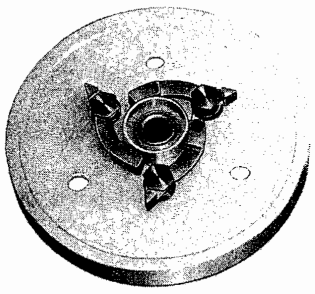

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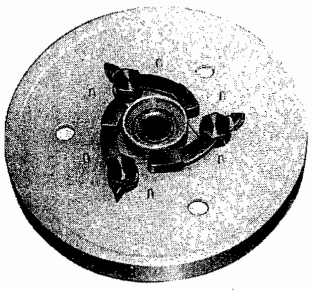

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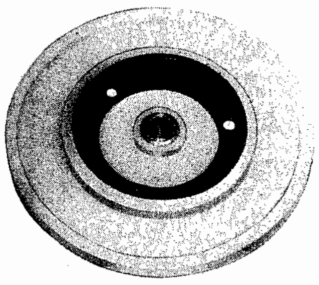

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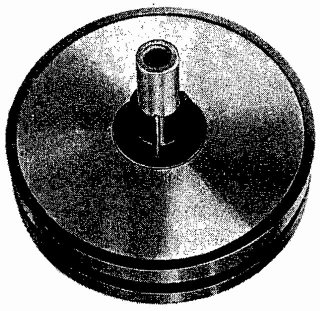

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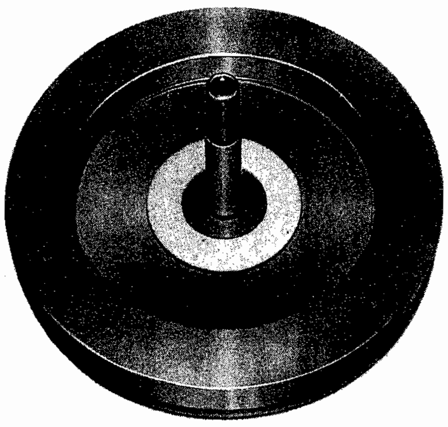

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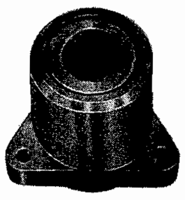

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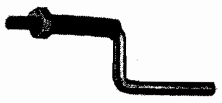

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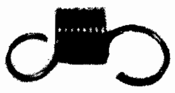

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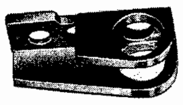

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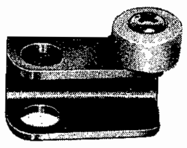

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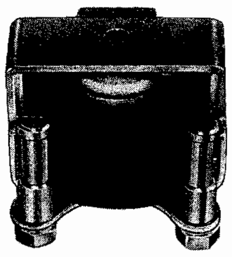
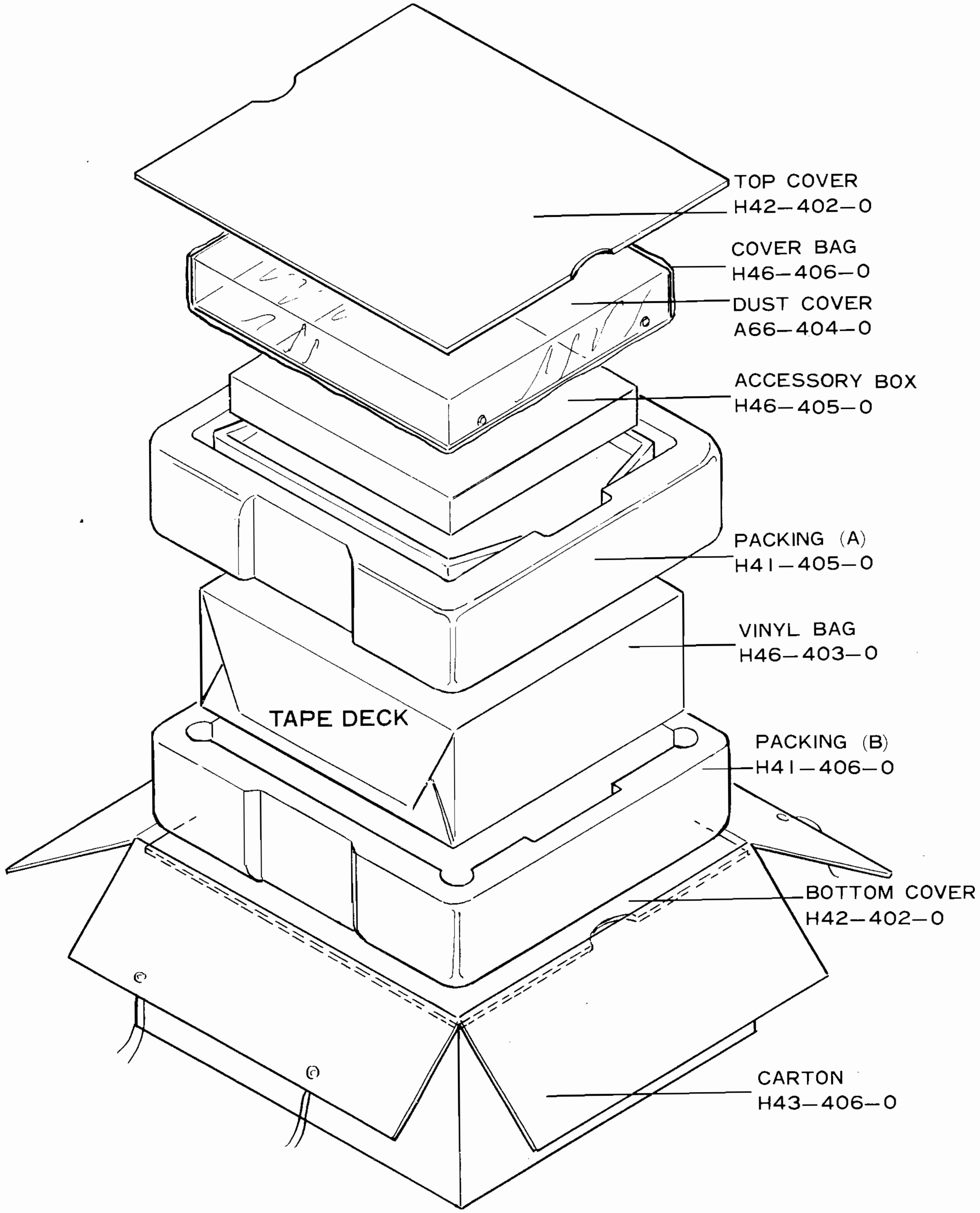


Symbol	Description	Part No.	
S9	Spring switch No. 5	S48-855-0	
S6	Spring switch No. 6	S48-856-B	
S14	Cancel switch	S41-854-0	
S15	Osc. switch	S21-418-0	
	Pilot lamp socket (E5)	K41-851-0	
	Pilot lamp (E5)	E22-851-0	
	Pilot lamp (Red)	E22-854-0	
	Pilot lamp (Green)	E22-405-0	
	Glass tube fuse 0.5A	E21-007-0	
	Glass tube fuse 1A	E21-004-0	
	Wooden case assembly	M55-403-B	
	Foot assembly	E17-404-0	
	Grommet	E31-851-0	
	Nylon ball	N93-856-0	
	Washer A for fly wheel	E31-854-B	
	Washer B for reel base	E31-857-0	
	Washer (7 x 5.2 x 0.5)	B23-866-0	
	Washer (6.5 x 4.2 x 0.3)		
	Washer (12 x 8.2 x 0.3)		
	Washer (10.8 x 7.5 x 0.3)		
	Washer (10 x 5.2 x 0.5)		
	Washer (8 x 5.2 x 0.2)		
	Washer (8 x 5.2 x 0.1)		
	Locking pin for plunger	B28-851-0	
	Styrene paper	H46-865-A	
	Accessory box	H46-405-0	
	Connecting cord	D53-851-0	
	Reel cap	E31-856-0	
	Head cleaning kit	E13-852-0	
	Cleaning ribbon	E33-856-0	
	Operating instructions	R12-407-0	

15. UNPACKING AND PARTS LIST


TOP COVER
H42–402–0
COVER BAG
H46–406–0
DUST COVER
A66–404–0
ACCESSORY BOX
H46–405–0
PACKING (A)
H41–405–0
VINYL BAG
H46–403–0
TAPE DECK
PACKING (B)
H41–406–0
BOTTOM COVER
H42–402–0
CARTON
H43–406–0

STEREO TAPE DECK

T-6100/F

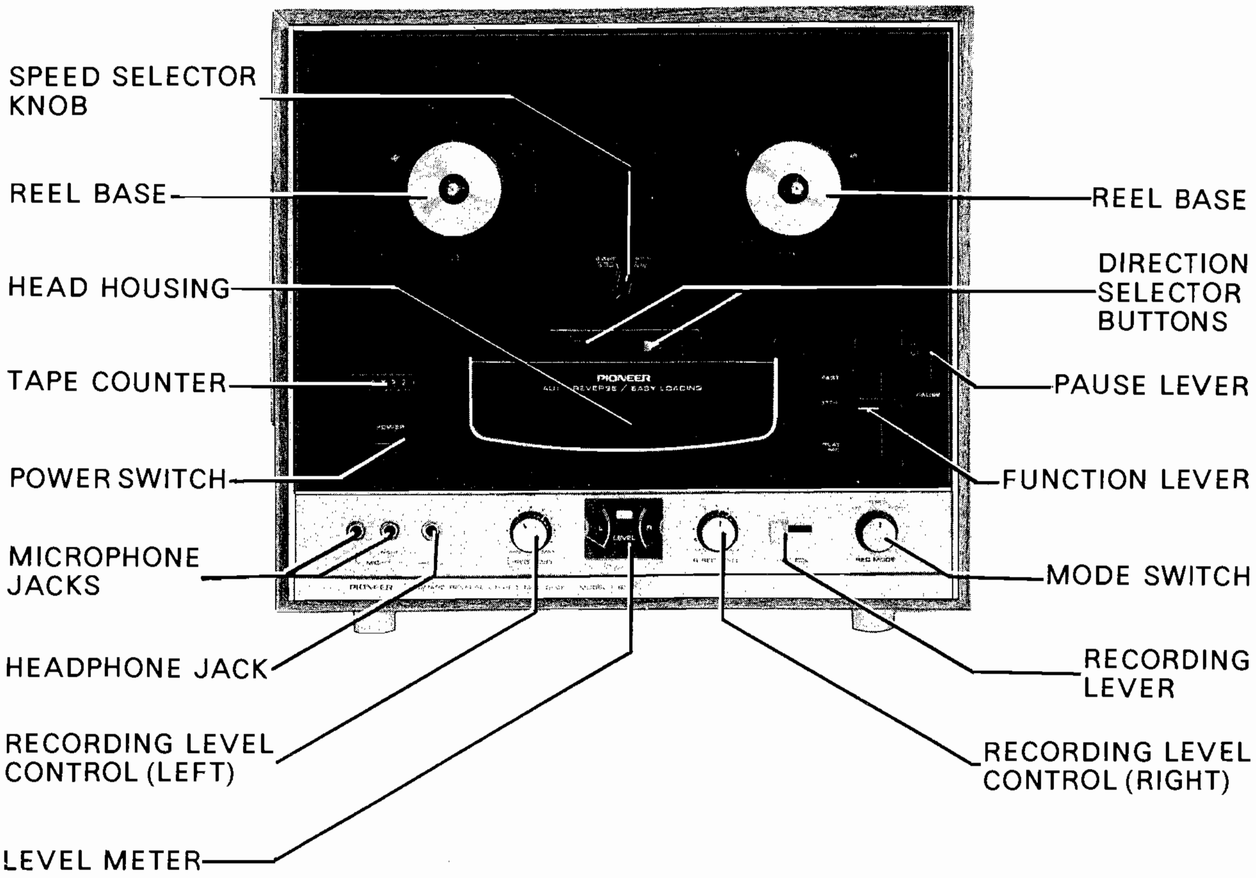
1. SPECIFICATIONS

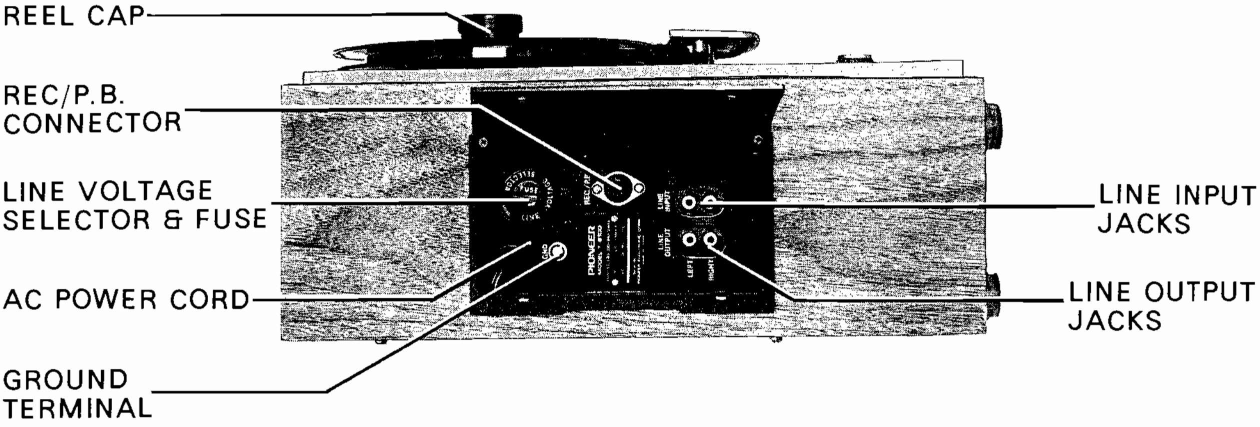
Drive and control	Center capstan drive with automatic reverse playbacks, and automatic repetition playbacks by sensing foil or by manual operation.
Track	4-track 2-channel stereo 4-track 1-channel mono
Recording compensation characteristic	NAB
Erasing	AC system
Reel	Up to 7 inches
Motor	Hysteresis synchronous motor
Heads	Two 4-track 2-channel heads for recording and playback One 4-track 2-channel head for erasing
Tape speeds	7-1/2 ips (19cm/s) 3-3/4 ips (9.5cm/s)
Fast winding time	Approx. 110 seconds (370m/1200ft tape)
Wow and flutter	Less than 0.12% at 7-1/2 ips (19cm/s) Less than 0.20% at 3-3/4 ips (9.5cm/s)
Frequency response	30 to 20,000Hz (50 to 15,000Hz, ±2dB) at 7-1/2 ips (19cm/s) 30 to 13,000Hz at 3-3/4 ips (9.5cm/s)
SN Ratio	More than 55 dB
Input	Microphone . . . . 0.3mV to 240mV/50kΩ Line input . . . . 30mV to 24V/330kΩ
Output	Line output . . . . 0.775V/50kΩ Headphone output 0.2mW/8Ω
Connector	REC/P.B. . . . . DIN type Line input . . . . Pin jack Line output . . . . Pin jack Microphone . . . . Standard jack Headphones . . . . Standard stereo jack
Built-in semiconductors	Transistors . . . . 14 Diodes 6
Power requirement	AC 110V, 117V, 130V, 220V and 240V (50Hz or 60Hz)
Maximum power consumption	70VA
Overall dimensions	15″15/16(W) X 14″7/8(H) X 6″27/32(D) (including foot) 421mm(W) X 378mm(H) X 174mm(D) (including foot)

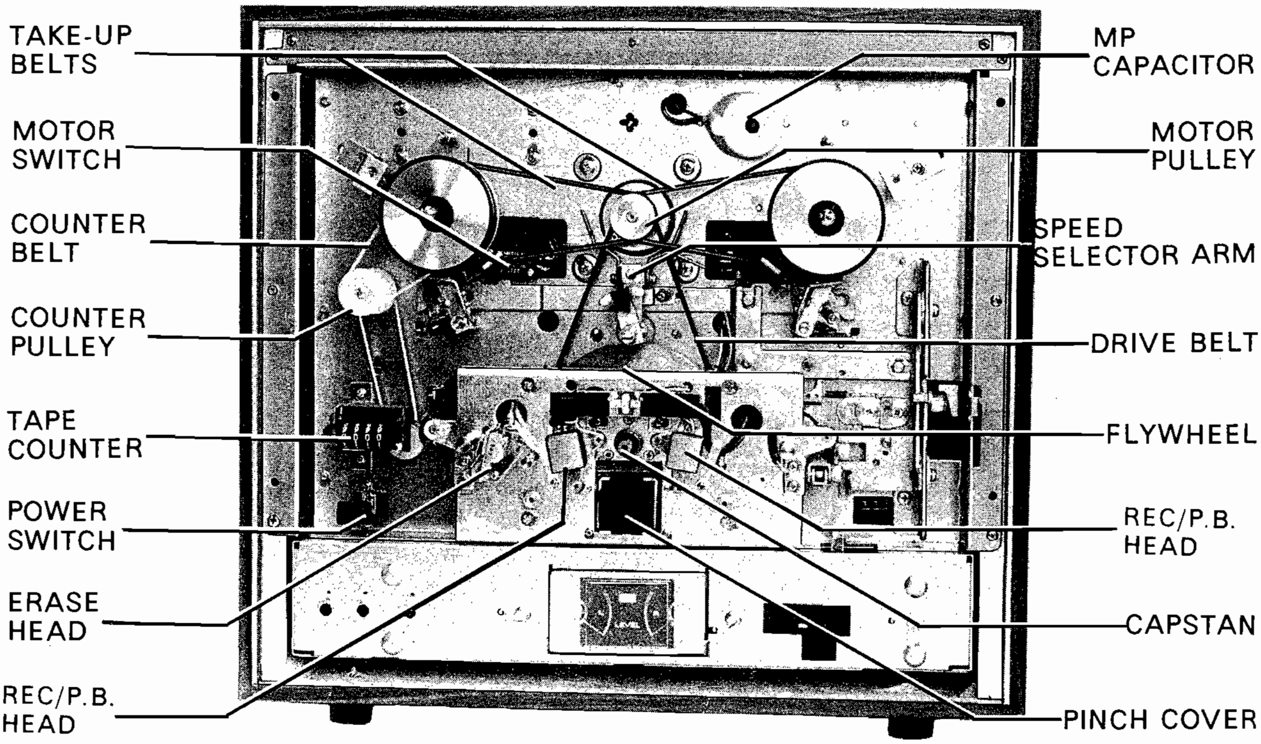
Weight	With package 37 lb 6 oz (17kg)	
	Without package 26 lb 7 oz (12kg)	
Furnished accessories	PR-70 empty reel (easy-loading reel)	1
	Vinyl cover	1
	Reel cap	2
	Connection cord	2
	Splicing tape	1
	Sensing foil	1
	Cleaning kit	1
	Fuse (1A)	1
	Motor pulley (50Hz or 60Hz)	1

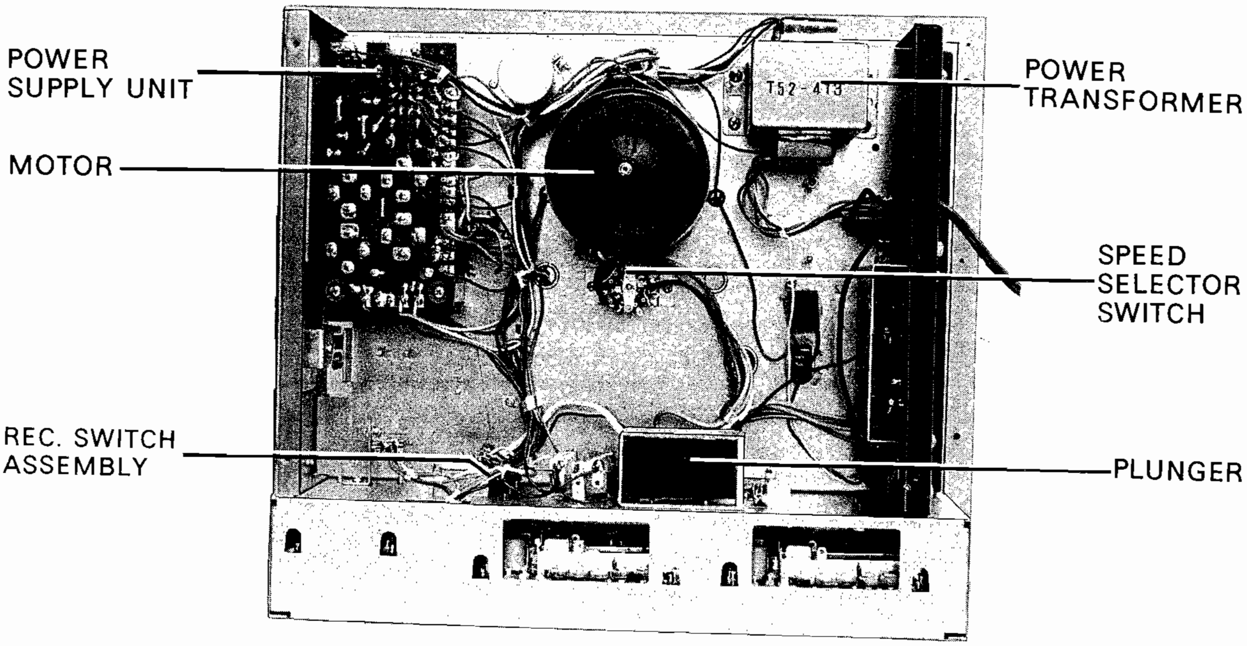
NOTE: Specifications and the design subject to possible modification without notice due to improvements.

2. PARTS IDENTIFICATION


SPEED SELECTOR KNOB
REEL BASE
HEAD HOUSING
TAPE COUNTER
POWER SWITCH
MICROPHONE JACKS
HEADPHONE JACK
RECORDING LEVEL CONTROL (LEFT)
LEVEL METER
REEL BASE
DIRECTION SELECTOR BUTTONS
PAUSE LEVER
FUNCTION LEVER
MODE SWITCH
RECORDING LEVER
RECORDING LEVEL CONTROL (RIGHT)
PIONEER
AUTO REVERSE / EASY LOADING
LEVEL


REEL CAP
REC/P.B. CONNECTOR
LINE VOLTAGE SELECTOR & FUSE
AC POWER CORD
GROUND TERMINAL
LINE INPUT JACKS
LINE OUTPUT JACKS
PIONEER


TAKE-UP BELTS
MOTOR SWITCH
COUNTER BELT
COUNTER PULLEY
TAPE COUNTER
POWER SWITCH
ERASE HEAD
REC/P.B. HEAD
MP CAPACITOR
MOTOR PULLEY
SPEED SELECTOR ARM
DRIVE BELT
FLYWHEEL
REC/P.B. HEAD
CAPSTAN
PINCH COVER


POWER SUPPLY UNIT
MOTOR
REC. SWITCH ASSEMBLY
POWER TRANSFORMER
T52-413
SPEED SELECTOR SWITCH
PLUNGER

3. DISASSEMBLY

I. FRONT PANEL

1. Remove the FUNCTION LEVER knob, the PAUSE LEVER knob and the SPEED SELECTOR knob.
2. Open the HEAD HOUSING and remove the two screws as shown in Photo 1 and the two screws from the reel base frames. Then, remove the front panel.
3. With the front panel removed, most of the mechanism can be inspected as shown in Photo 2.

II. AMPLIFIER PANEL

1. Remove the RECORDING LEVEL control knobs (Left and Right), and the MODE SWITCH knob as shown in Photo 3.
2. Remove the lock nuts and washers that secure the shafts of the RECORDING LEVEL control knobs (Left and Right).
3. Now, replacement of the pilot lamps and the level meters can be made.

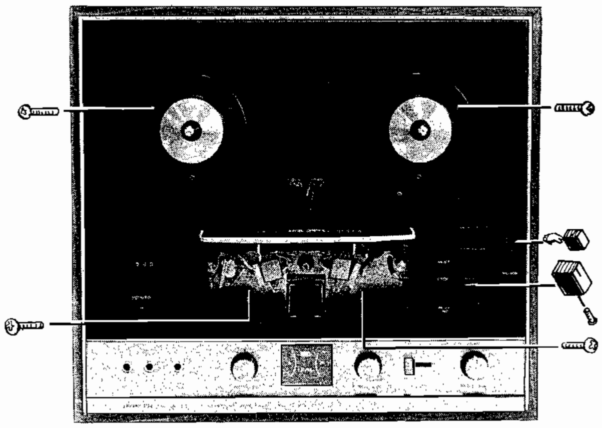


Photo 1

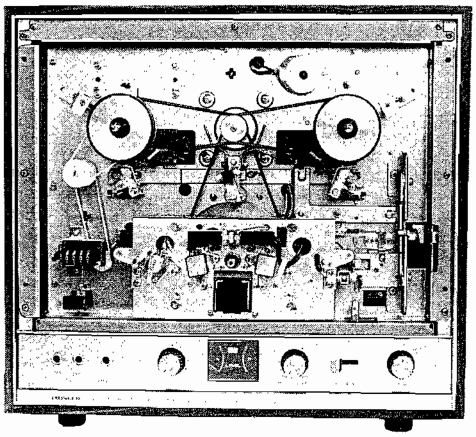


Photo 2

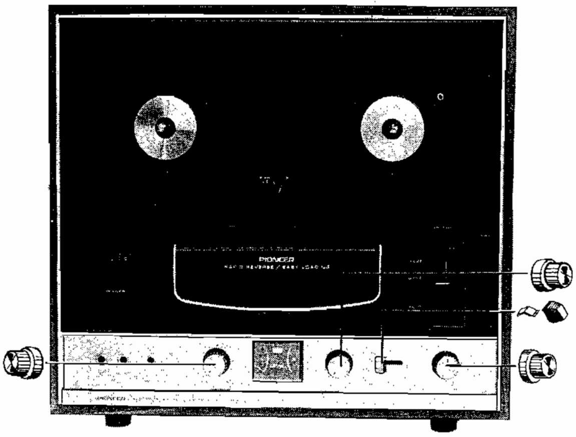


Photo 3

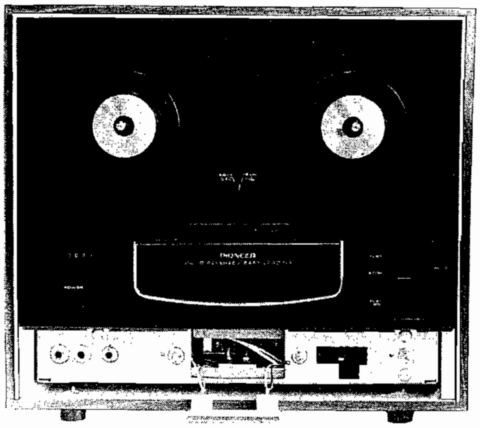


Photo 4

III. WOODEN BASE

1. Remove the four screws on the bottom of the wooden base.
2. Remove the wooden base, the motor, the plunger, the power supply P.C.B. assembly, and the other parts can be inspected as shown in Photo 6.

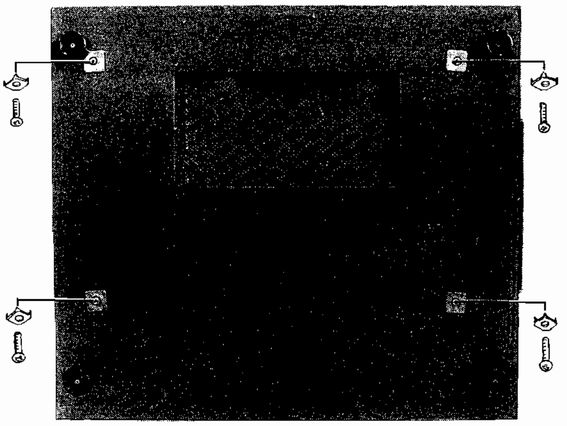


Photo 5

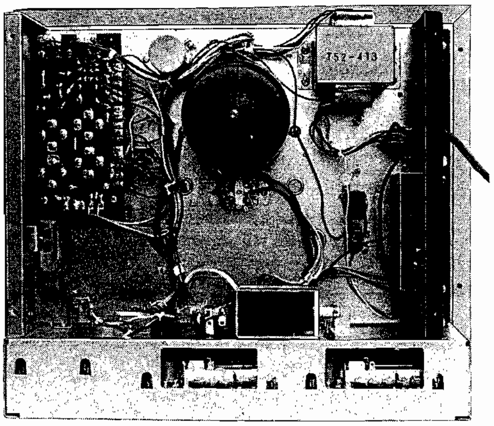


Photo 6

IV. COVER OF AMPLIFIER CHASSIS

1. With wooden base removed, remove the two screws shown in Photo 7 and pull the cover frontwards. The cover will come off easily.
2. With the cover removed, adjustments or replacement of the amplifier P.C.B. assembly can be made as shown in Photo 8.

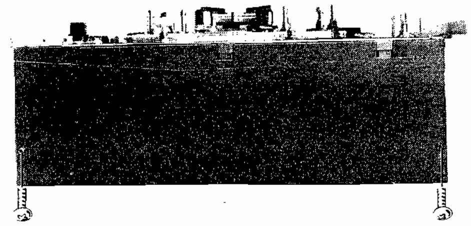


Photo 7

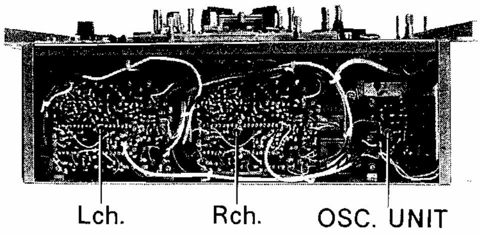


Photo 8

4. ADJUSTMENT OF ELECTRIC CIRCUITS

The T-6100 is almost the same as the T-6600 mechanically and electrically. Therefore, as to the T-6100, please refer to the service manual furnished with the T-6600 except the following items on adjustment:

RECORDING BIAS ADJUSTMENT

1) Connect the measuring instruments as shown in Fig. 1.
2) Set the unit to recording condition. Turn the RECORDING LEVEL control knob to the minimum, and set the MODE SWITCH to the "STEREO" position.
3) Adjust L_3 so that the amplitude of the bias waveform on the synchroscope connected to the test points (TP1) may become less than 3V (P-P).
4) Adjust the variable resistors (VR_{7-8}) so that the Vacuum Tube Voltmeters (V.T.V.M.) connected to the test points (TP 2) may indicate 9 mV (this means that the bias current is 900 μA).
5) Set the MODE SWITCH to L (left channel) or to R (right channel), and to change the tape direction. Adjust L_4 so that the change of the bias waveform on the synchroscope may become the least significant as compared with the change in the case of "STEREO" operation.
6) Adjust VR_9 so that the change of the bias current may remain within the range of ±100 μA. This value changes to voltage on V.T.V.M. of step (5), the range approximately is 8mV to 10mV.
7) Repeat the adjustment procedures 3 to 6 several times.

Note: It may be necessary to increase or reduce the bias current in accordance with the recording/playback frequency response.

Direction of tape traveling	Channel	Adjusting portion
Forward	Left	OSC amplifier VR_7
	Right	OSC amplifier VR_8

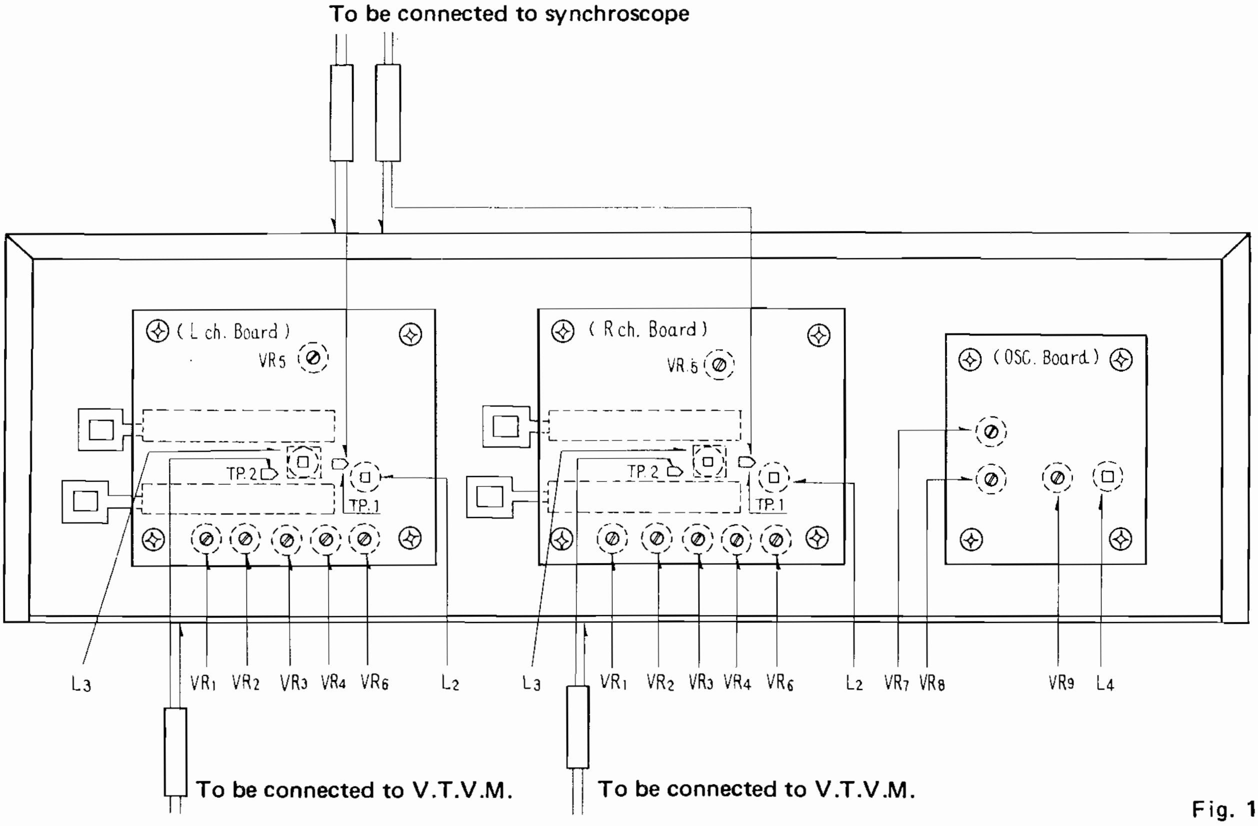

To be connected to synchroscope
(L ch. Board)
VR5
TP.2
TP.1
(R ch. Board)
VR6
(OSC. Board)
L3
VR1
VR2
VR3
VR4
VR6
L2
L3
VR1
VR2
VR3
VR4
VR6
L2
VR7
VR8
VR9
L4
To be connected to V.T.V.M.
To be connected to V.T.V.M.

Fig. 1

PLAYBACK SENSITIVITY CALIBRATION

1) Connect the V.T.V.M's to the right and left channels of the OUTPUT terminal respectively.
2) Load the test tape and run the tape at 7-1/2 ips (19 cm/s).
3) Playback Zone No. 3 of the test tape (700 Hz, 0 dB, full track). Adjust VR3-4 so that the pointer of the V.T.V.M's may indicate 0 dB (0.775 V).

Direction of tape traveling	Channel	Adjusting portion
Forward	Left	VR3 of L ch. amplifier
	Right	VR3 of R ch. amplifier
Reverse	Left	VR4 of L ch. amplifier
	Right	VR4 of R ch. amplifier

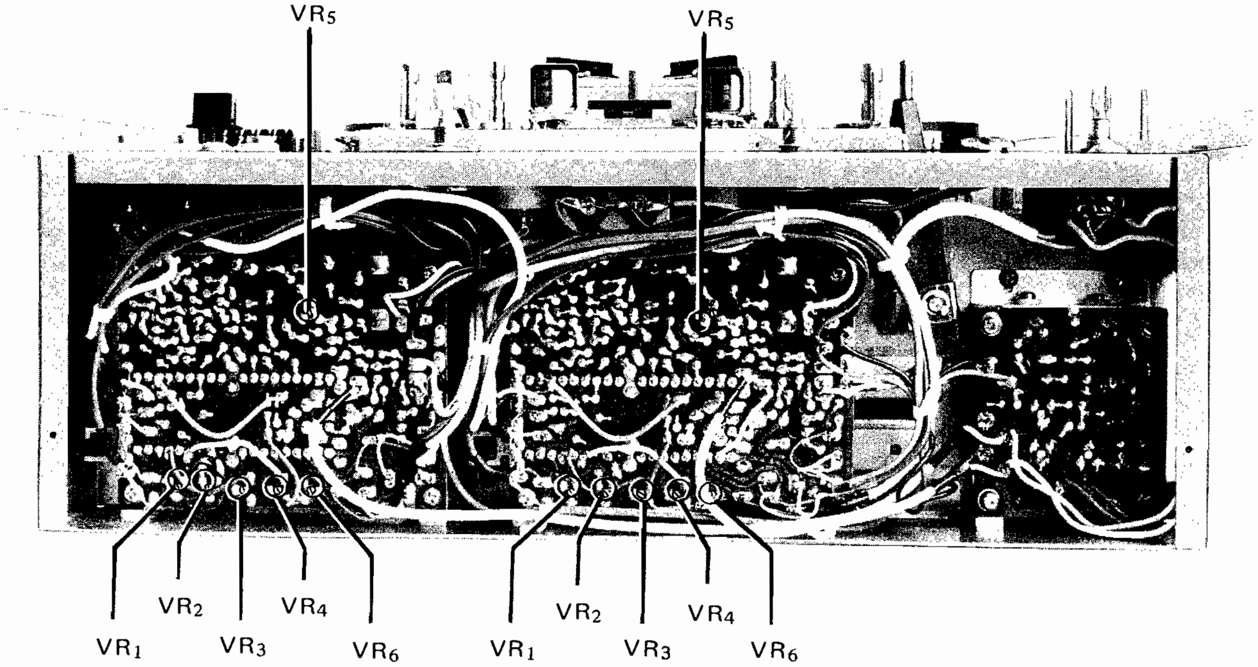


Photo 9

LEVEL METER CALIBRATION

1) Connect the V.T.V.M's to the right and left channels of the OUTPUT terminal respectively.
2) Load the test tape and run the tape at 7-1/2 ips (19 cm/s.)
3) Playback Zone No. 3 of the test tape (700 Hz, 0 dB, full track). Adjust VR_5 so that the pointer of the V.T.V.M's may indicate 0 dB (0.775 V).

Notes:
- Adjust the meters by VR5 so that the pointer reaches between red zone and silver zone on the scale.
- In this case, the output level at LINE OUTPUT terminal should be set to 0 dB (0.775 V) for both channels.

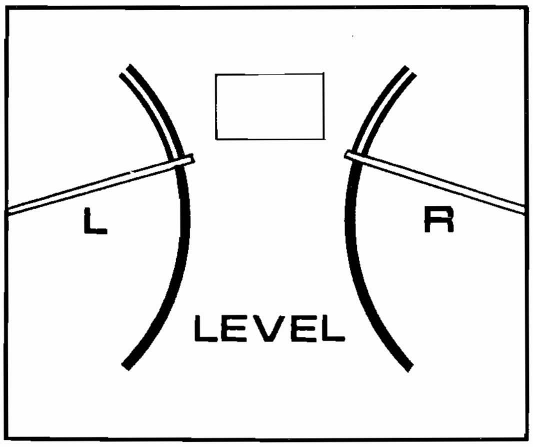


Fig. 2

RECORDING LEVEL CALIBRATION

After the recording bias and the playback sensitivity have been adjusted or calibrated, the adjustment of the recording circuit sensitivity is to be performed. Use a new Scotch No. 111 tape for adjustment of recording level.

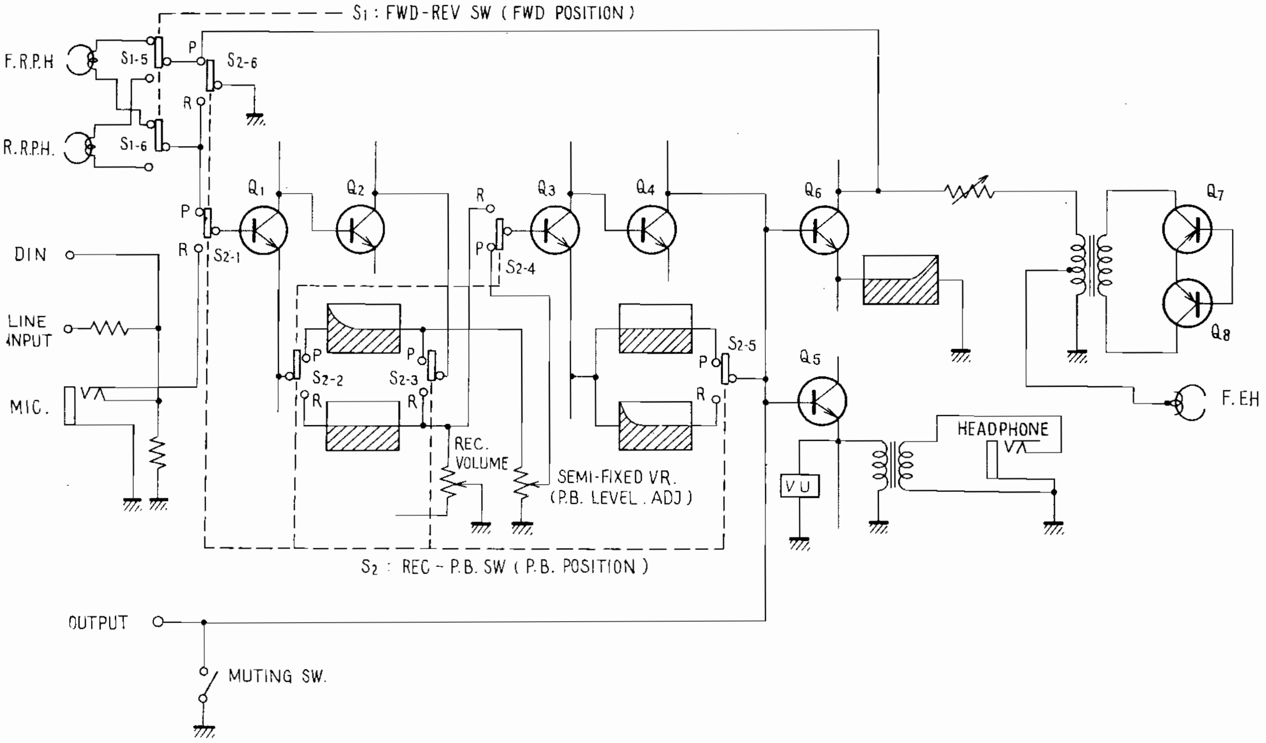
1) Connect an audio oscillator to the LINE INPUT terminal and a V.T.V.M. to the LINE OUTPUT terminal.
2) Run the tape at 7-1/2 ips (19cm/s).
3) Supply signal of 1 kHz (-18 dB, about 100 mV) to LINE INPUT terminal and record it. Adjust the recording level by means of the RECORDING LEVEL knob so that it may become 0 dB (0.775 V) on the V.T.V.M.
   Note: Once the recording level has been set with the knob, don't touch the knob hereafter.
4) Playback the tape recorded through the step 3. If V.T.V.M. voltage reading is less than 0 dB (0.775V), turn the variable resistors VR_6 to the right a little, and reading is more than 0 dB, turn them to the left a little. Do not turn the playback output level too much to avoid changing the level with V.T.V.M.
5) Try recording according to step 3 once, more, and re-playback this recorded tape, then check playback level again, reading value should get close to 0 dB (0.775V).
6) Repeat this adjustment of both recording and playback several times so that the playback output level may become 0 dB (0.775 V).

Direction of tape traveling	Channel	Adjustment portion
Forward	Left	VR6 of the L ch. amplifier
	Right	VR6 of the R ch. amplifier

5. BLOCK DIAGRAMS

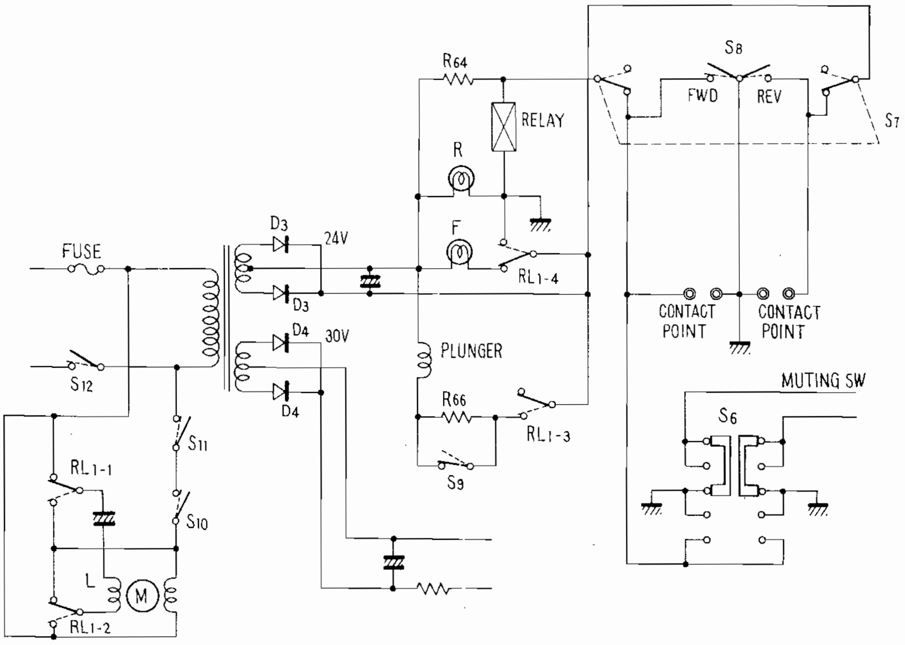
To understand the OUTLINE OF ELECTRIC CIRCUIT of the T-6100, please read the OUTLINE OF ELECTRIC CIRCUIT of the T-6600 by making reference to these BLOCK DIAGRAMS.

AMPLIFIER AND OSC. UNITS



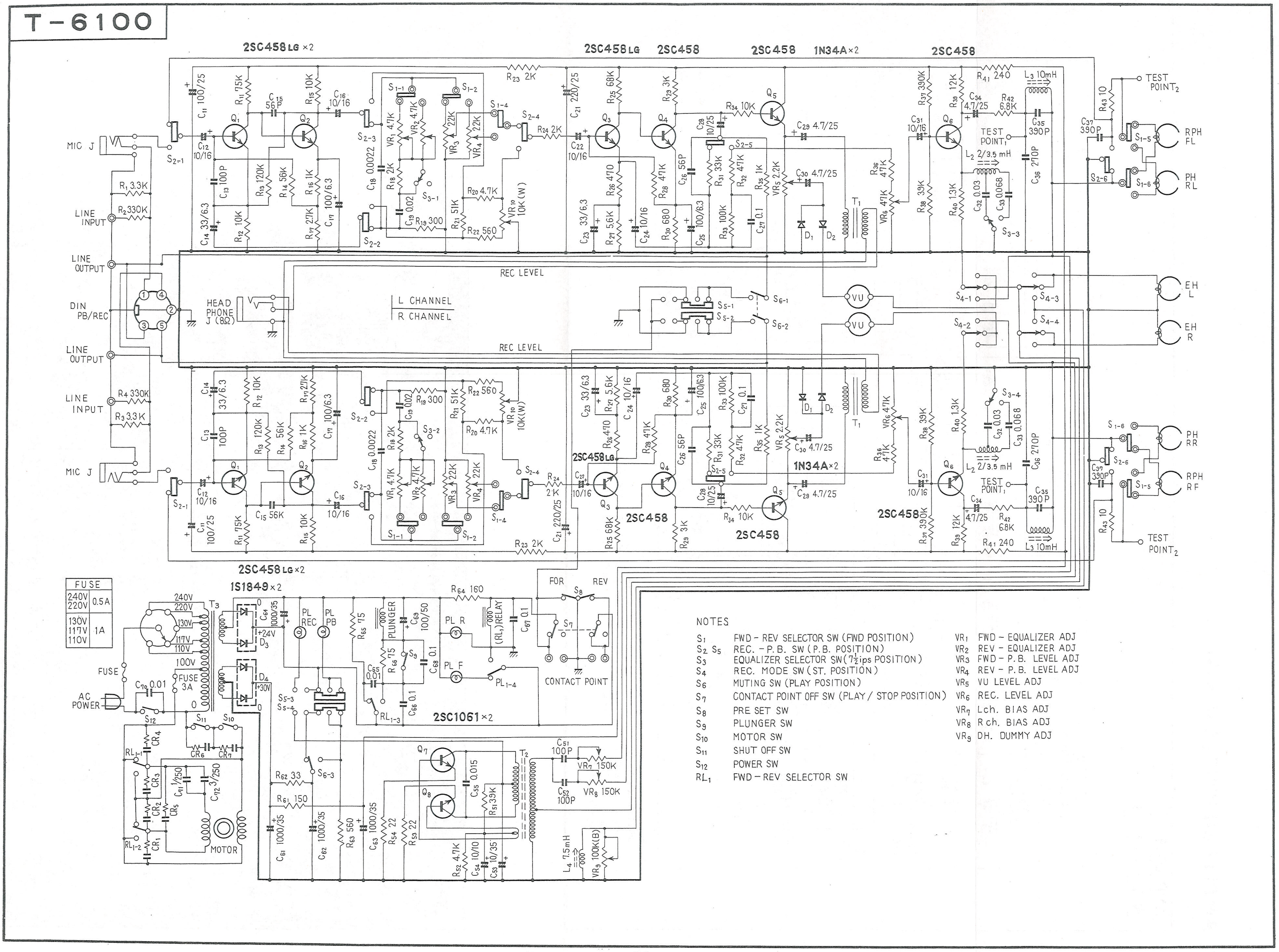
S1 : FWD-REV SW (FWD POSITION)
F.R.P.H
R.R.P.H.
S1-5
S1-6
S2-6
P
R
S2-1
DIN
LINE INPUT
MIC.
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
S2-2
S2-3
S2-4
S2-5
REC. VOLUME
SEMI-FIXED VR. (P.B. LEVEL . ADJ)
S2 : REC - P.B. SW (P.B. POSITION)
VU
HEADPHONE
F. EH
OUTPUT
MUTING SW.

CONTROL AND POWER SUPPLY UNITS



R64
RELAY
R
F
S8
FWD
REV
S7
FUSE
D3
24V
D3
D4
30V
D4
RL1-4
PLUNGER
R66
RL1-3
S9
S12
S11
S10
RL1-1
L
M
RL1-2
CONTACT POINT
CONTACT POINT
MUTING SW
S6

6. SCHEMATIC DIAGRAMS AND PRINTED CIRCUIT BOARDS

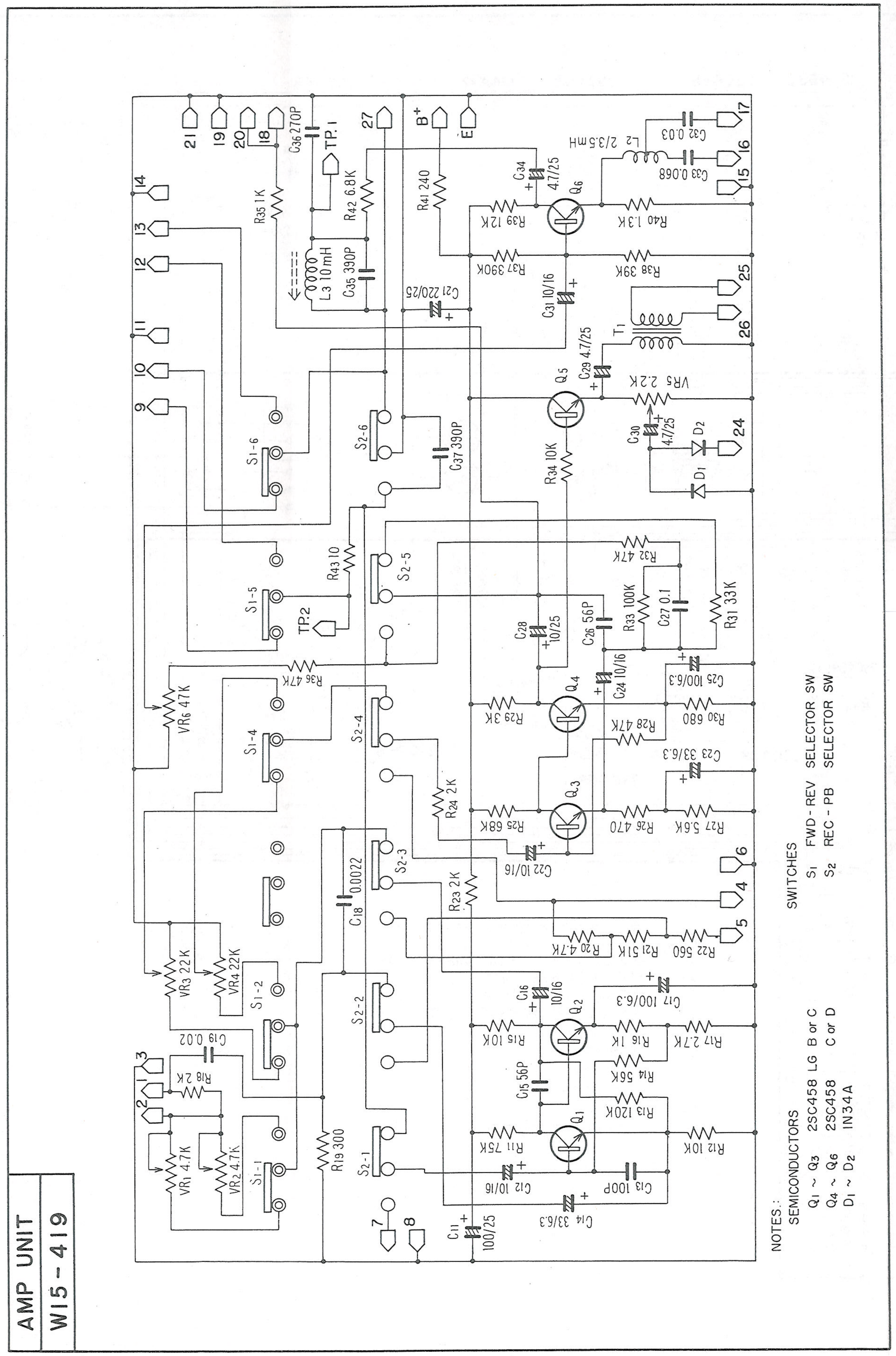

T-6100
2SC458LG ×2
2SC458LG
2SC458
1N34A×2
MIC J
LINE INPUT
LINE OUTPUT
DIN PB/REC
HEAD PHONE J (8Ω)
L CHANNEL
R CHANNEL
REC LEVEL
VU
TEST POINT1
TEST POINT2
RPH FL
PH RL
EH L
EH R
PH RR
RPH RF
R1 3.3K
R2 330K
R3 3.3K
R4 330K
C11 100/25
C12 10/16
C13 100P
C14 33/6.3
R11 75K
R12 10K
R13 120K
R14 56K
C15 56P
R15 10K
R16 1K
R17 27K
C16 10/16
C17 100/6.3
C18 0.0022
R18 2K
C19 0.02
R19 300
VR1 4.7K
VR2 4.7K
VR3 22K
VR4 22K
R20 4.7K
R21 51K
R22 560
VR10 10K(W)
R23 2K
R24 2K
C21 220/25
C22 10/16
C23 33/6.3
R25 68K
R26 470
R27 5.6K
C24 10/16
R28 47K
R29 3K
R30 680
C25 100/63
C26 56P
C27 0.1
C28 10/25
R31 33K
R32 47K
R33 100K
R34 10K
R35 1K
VR5 2.2K
C29 4.7/25
C30 4.7/25
D1
D2
T1
R36 47K
VR6 47K
R37 390K
R38 39K
R39 12K
R40 1.3K
C31 10/16
C32 0.03
C33 0.068
C34 4.7/25
C35 390P
C36 270P
C37 390P
R41 240
R42 6.8K
R43 10
L2 2/3.5 mH
L3 10mH
S1-1
S1-2
S1-4
S1-5
S1-6
S2-1
S2-2
S2-3
S2-4
S2-5
S2-6
S3-1
S3-2
S3-3
S3-4
S4-1
S4-2
S4-3
S4-4
S5-1
S5-2
S6-1
S6-2
Q1
Q2
Q3
Q4
Q5
Q6
2SC458LG ×2
1S1849 ×2
240V
220V
130V
117V
110V
100V
T3
FUSE
FUSE 3A
AC POWER
C70 0.01
S12
S11
S10
RL1-1
RL1-2
CR1
CR2
CR3
CR4
CR5
CR6
CR7
C71 1/250
C72 3/250
MOTOR
D3
D4
C64 1000/35
+24V
+30V
PL REC
PL PB
S5-3
S5-4
R65 75
PLUNGER
C69 100/50
R66 75
C65 0.01
S9
C68 0.1
C66 0.1
RL1-3
2SC1061 ×2
R64 160
PL R
(RL) RELAY
C67 0.1
PL F
PL1-4
FOR
REV
S8
S7
CONTACT POINT
R62 33
S6-3
R61 150
C61 1000/35
C62 1000/35
R63 560
C63 1000/35
R54 22
R53 22
Q7
Q8
C55 0.015
R51 39K
R52 4.7K
C54 10/10
C53 10/35
T2
C51 100P
VR7 150K
C52 100P
VR8 150K
L4 7.5mH
VR9 100K(B)

FUSE	
240V 220V	0.5A
130V 117V 110V	1A

NOTES

S_1	FWD - REV SELECTOR SW (FWD POSITION)	VR_1	FWD - EQUALIZER ADJ
S_2 S_5	REC. - P.B. SW (P.B. POSITION)	VR_2	REV - EQUALIZER ADJ
S_3	EQUALIZER SELECTOR SW (7½ ips POSITION)	VR_3	FWD - P.B. LEVEL ADJ
S_4	REC. MODE SW (ST. POSITION)	VR_4	REV - P.B. LEVEL ADJ
S_6	MUTING SW (PLAY POSITION)	VR_5	VU LEVEL ADJ
S_7	CONTACT POINT OFF SW (PLAY / STOP POSITION)	VR_6	REC. LEVEL ADJ
S_8	PRE SET SW	VR_7	Lch. BIAS ADJ
S_9	PLUNGER SW	VR_8	R ch. BIAS ADJ
S_{10}	MOTOR SW	VR_9	DH. DUMMY ADJ
S_{11}	SHUT OFF SW		
S_{12}	POWER SW		
RL_1	FWD - REV SELECTOR SW		

AMPLIFIER UNIT (W15-419)


AMP UNIT
W15-419
Q1 Q2 Q3 Q4 Q5 Q6
R11 75K
R12 10K
R13 120K
R14 56K
R15 10K
R16 1K
R17 2.7K
R18 2K
R19 300
R20 4.7K
R21 51K
R22 560
R23 2K
R24 2K
R25 68K
R26 470
R27 5.6K
R28 47K
R29 3K
R30 680
R31 33K
R32 47K
R33 100K
R34 10K
R35 1K
R36 47K
R37 390K
R38 39K
R39 12K
R40 1.3K
R41 240
R42 6.8K
R43 10
VR1 4.7K
VR2 4.7K
VR3 22K
VR4 22K
VR5 2.2K
VR6 47K
C11 100/25
C12 10/16
C13 100P
C14 33/6.3
C15 56P
C16 10/16
C17 100/6.3
C18 0.0022
C19 0.02
C21 220/25
C22 10/16
C23 33/6.3
C24 10/16
C25 100/6.3
C26 56P
C27 0.1
C28 10/25
C29 4.7/25
C30 4.7/25
C31 10/16
C32 0.03
C33 0.068
C34 4.7/25
C35 390P
C36 270P
C37 390P
L2 2/3.5mH
L3 10mH
T1
D1 D2
TP.1 TP2
S1-1 S1-2 S1-4 S1-5 S1-6
S2-1 S2-2 S2-3 S2-4 S2-5 S2-6
B+
E
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 24 25 26 27

NOTES:

SEMICONDUCTORS

Q1 ~ Q3 2SC458 LG B or C

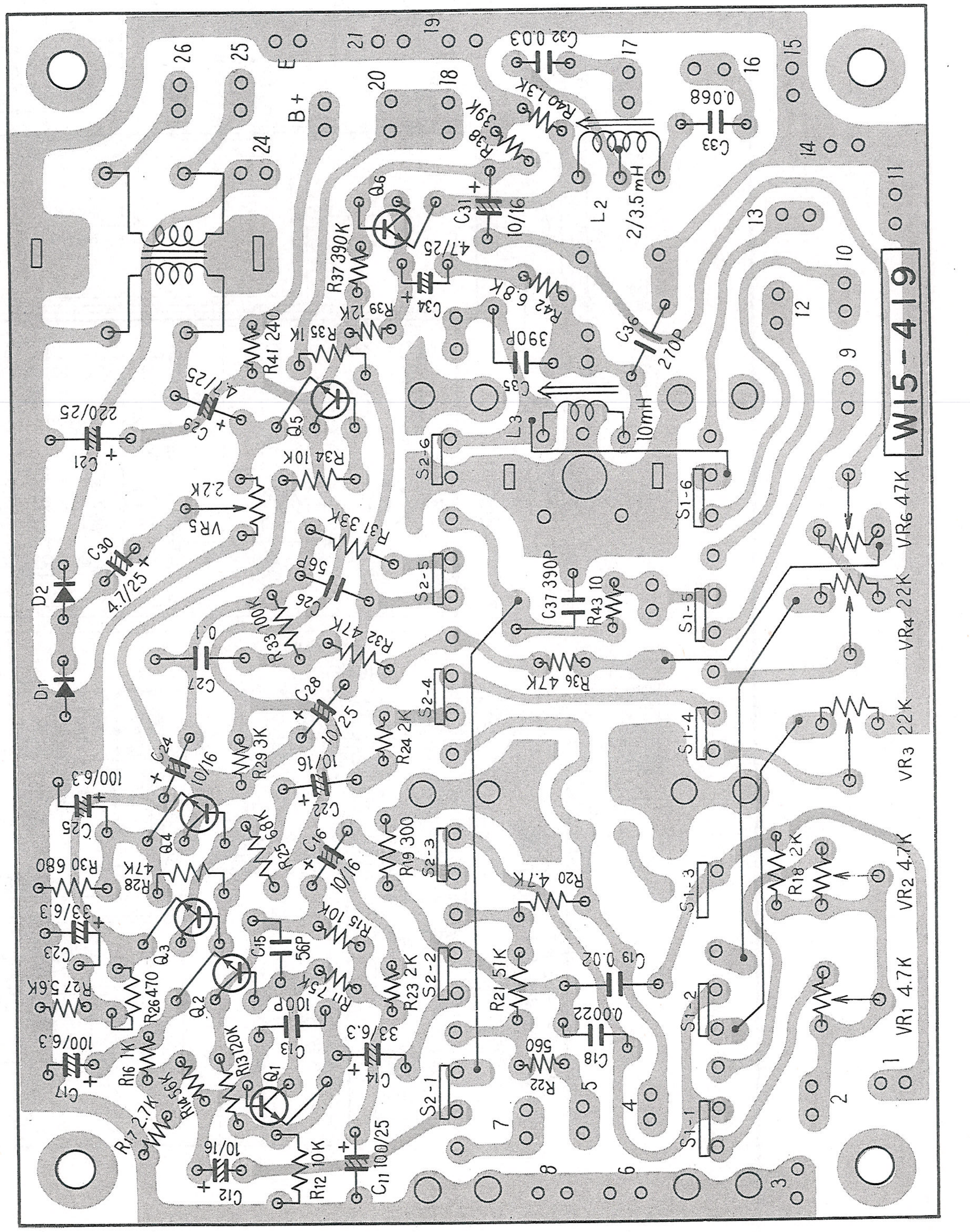
Q4 ~ Q6 2SC458 C or D

D1 ~ D2 1N34A

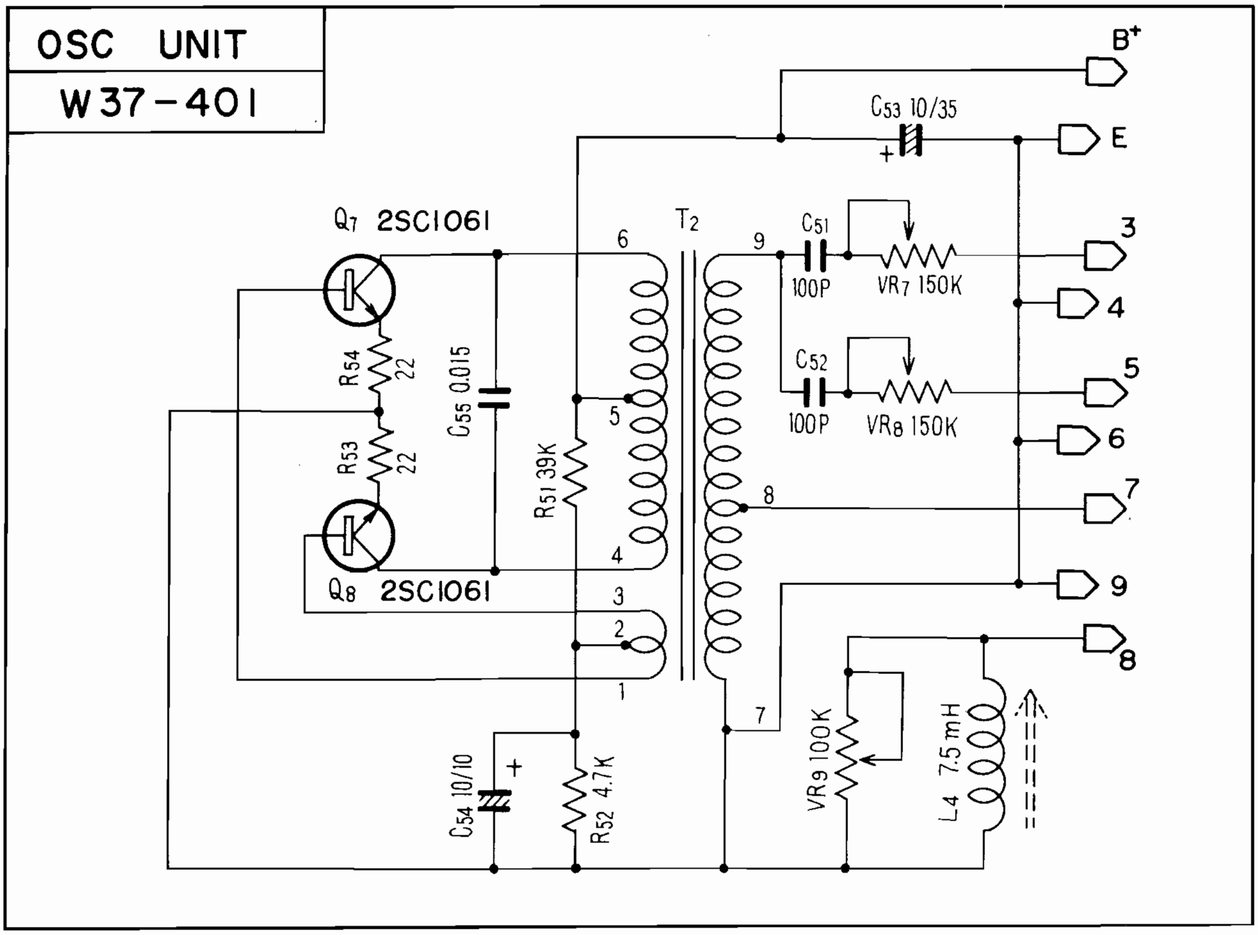
SWITCHES

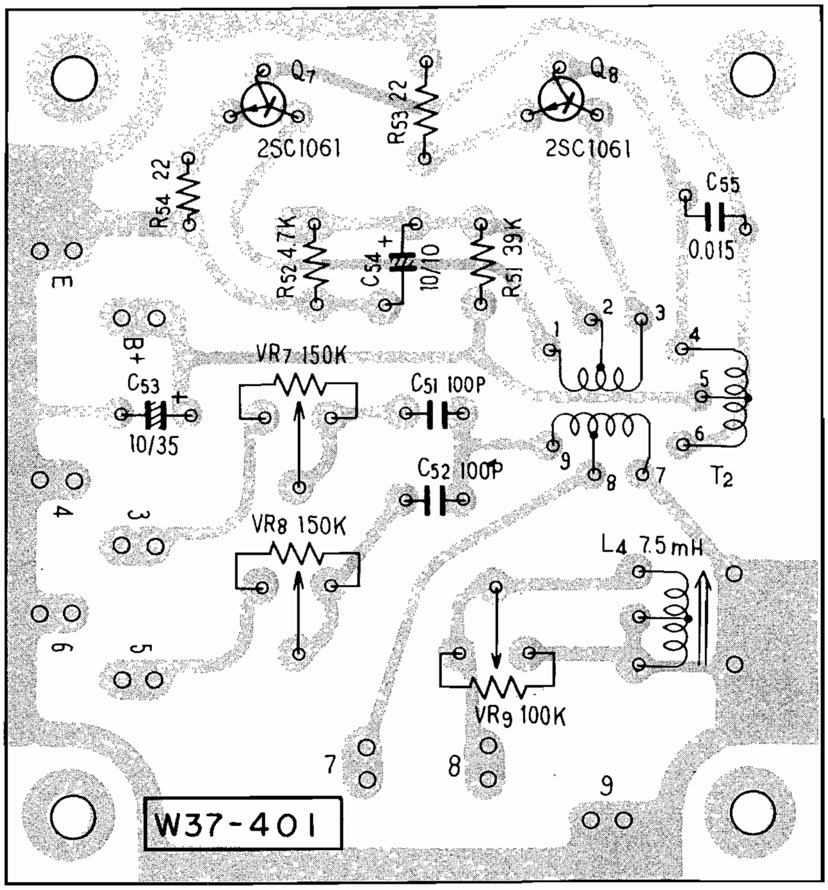
S1 FWD-REV SELECTOR SW

S2 REC-PB SELECTOR SW


W15-419
Q1 Q2 Q3 Q4 Q5 Q6
R12 10K
R13 120K
R14 56K
R15 10K
R16 1K
R17 2.7K
R18 2K
R19 300
R20 4.7K
R21 51K
R22 560
R23 2K
R24 2K
R25 68K
R26 470
R27 5.6K
R28 47K
R29 3K
R30 680
R31 33K
R32 47K
R33 100K
R34 10K
R35 1K
R36 47K
R37 390K
R38 39K
R39 12K
R40 1.3K
R41 240
R42 6.8K
R43 10
VR1 4.7K
VR2 4.7K
VR3 22K
VR4 22K
VR5 2.2K
VR6 47K
C11 100/25
C12 10/16
C13 100P
C14 33/6.3
C15 56P
C16 10/16
C17 100/6.3
C18 0.0022
C19 0.02
C21 220/25
C22 10/16
C23 33/6.3
C24 10/16
C25 100/6.3
C26 56P
C27 0.1
C28 10/25
C29 4.7/25
C30 4.7/25
C31 10/16
C32 0.03
C33 0.068
C34 4.7/25
C35 390P
C36 270P
C37 390P
L2 2/3.5mH
L3 10mH
D1 D2
S1-1 S1-2 S1-3 S1-4 S1-5 S1-6
S2-1 S2-2 S2-3 S2-4 S2-5 S2-6
B+
E
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 24 25 26

OSC. UNIT (W37-401)


OSC UNIT
W37-401
B+
C_{53} 10/35
E
Q_7 2SC1061
T_2
6
9
C_{51}
100P
VR_7 150K
3
4
5
C_{52}
100P
VR_8 150K
6
7
R_{54} 22
C_{55} 0.015
R_{53} 22
R_{51} 39K
5
8
4
Q_8 2SC1061
3
2
1
9
8
7
C_{54} 10/10
R_{52} 4.7K
VR_9 100K
L_4 7.5mH


Q_7
2SC1061
R_{53} 22
Q_8
2SC1061
R_{54} 22
C_{55}
0.015
E
R_{52} 4.7K
C_{54} 10/10
R_{51} 39K
B+
1
2
3
4
5
6
VR_7 150K
C_{53}
10/35
C_{51} 100P
C_{52} 100P
9
8
7
T_2
4
3
VR_8 150K
L_4 7.5mH
6
5
VR_9 100K
7
8
9
W37-401

7. ELECTRIC PARTS LIST

CAPACITORS

In µF unless otherwise noted. P=pF

Symbol	Description	Part No.	
C11	Electrolytic 100 25V	CEMX 100MF 25V	
C12	Electrolytic 10 16V	CEMX 10MF 16V	
C13	Styrol 100p 50V	CQSA 101K 50	
C14	Electrolytic 33 6.3V	CEMX 33MF 6R3V	
C15	Styrol 56p 50V	CQSA 560K 50	
C16	Electrolytic 10 16V	CEMX 10MF 16V	
C17	Electrolytic 100 6.3V	CEMX 100MF 6R3V	
C18	Mylar 0.0022 50V	CQMA 222K 50	
C19	Mylar 0.02 50V	CQMA 203K 50	
C20			
C21	Electrolytic 220 25V	CEMX 220MF 25V	
C22	Electrolytic 10 16V	CEMX 10MF 16V	
C23	Electrolytic 33 6.3V	CEMX 33MF 6R3V	
C24	Electrolytic 10 16V	CEMX 10MF 16V	
C25	Electrolytic 100 6.3V	CEMX 100MF 6R3V	
C26	Styrol 56p 50V	CQSA 560K 50	
C27	Mylar 0.1 50V	CQMA 104K 50	
C28	Electrolytic 10 25V	CEMX 10MF 25V	
C29	Electrolytic 4.7 25V	CEMX 4R7MF 25V	
C30	Electrolytic 4.7 25V	CEMX 4R7MF 25V	
C31	Electrolytic 10 16V	CEMX 10MF 16V	
C32	Mylar 0.03 50V	CQMA 303K 50	
C33	Mylar 0.068 50V	CQMA 683K 50	
C34	Electrolytic 4.7 25V	CEMX 4R7MF 25V	
C35	Styrol 390p 50V	CQSA 391K 50	
C36	Styrol 270p 50V	CQSA 271K 50	
C37	Styrol 390p 50V	CQSA 391K 50	
C51	Styrol 100p 50V	CQSA 101K 50	
C52	Styrol 100p 50V	CQSA 101K 50	
C53	Electrolytic 10 35V	CEMX 10MF 35V	
C54	Electrolytic 10 10V	CEMX 10MF 10V	
C55	Styrol 0.015 50V	CQSA 153K 50	
C61	Electrolytic 1000 35V	C52-068-0	
C62	Electrolytic 1000 35V	C52-068-0	
C63	Electrolytic 1000 35V	C52-068-0	
C64	Electrolytic 1000 35V	C52-068-0	
C65	Mylar 0.1 50V	CQMA 104K 50	
C66	Mylar 0.1 50V	CQMA 104K 50	
C67	Mylar 0.1 50V	CQMA 104K 50	
C68	Mylar 0.1 50V	CQMA 104K 50	
C69	Electrolytic 100 50V	CEMX 100MF 50V	
C70	Ceramic 0.01 D.C. 1.4kV	C43-003-0	
C71	M.P. 1 250V	C22-403-0	
C72	M.P. 3 250V	C22-403-0	

RESISTORS

In ohm, 10% tolerance unless otherwise noted. k=kΩ

Symbol	Description	Part No.	
R1	Carbon film 3.3k	RF¼P 3R3K-K	
R2	Carbon film 330k	RF¼P 330K-K	
R3	Carbon film 3.3k	RF¼P 3R3K-K	
R4	Carbon film 330k	RF¼P 330K-K	
R5	Carbon film 33k	RF¼PS 33K-K	
R6	Carbon film 33k	RF¼PS 33K-K	
R11	Carbon film 75k	RF¼VS 75K-K	
R12	Carbon film 10k	RF¼VS 10K-K	
R13	Carbon film 120k	RF¼VS 120K-K	
R14	Carbon film 56k	RF¼VS 56K-K	

Symbol	Description	Part No.	
R15	Carbon film 10k	RF¼VS 10K-K	
R16	Carbon film 1k	RF¼VS 1K-K	
R17	Carbon film 2.7k	RF¼VS 2R7K-K	
R18	Carbon film 2k	RF¼VS 2K-K	
R19	Carbon film 300	RF¼VS 300-K	
R20	Carbon film 4.7k	RF¼VS 4R7K-K	
R21	Carbon film 51k	RF¼VS 51K-K	
R22	Carbon film 560	RF¼VS 560-K	
R23	Carbon film 2k	RF¼VS 2K-K	
R24	Carbon film 2k	RF¼VS 2K-K	
R25	Carbon film 68k	RF¼VS 68K-K	
R26	Carbon film 470	RF¼VS 470-K	
R27	Carbon film 5.6k	RF¼VS 5R6K-K	
R28	Carbon film 47k	RF¼VS 47K-K	
R29	Carbon film 3k	RF¼VS 3K-K	
R30	Carbon film 680	RF¼VS 680-K	
R31	Carbon film 33k	RF¼VS 33K-K	
R32	Carbon film 47k	RF¼VS 47K-K	
R33	Carbon film 100k	RF¼VS 100K-K	
R34	Carbon film 10k	RF¼VS 10K-K	
R35	Carbon film 1k	RF¼VS 1K-K	
R36	Carbon film 47k	RF¼VS 47K-K	
R37	Carbon film 390k	RF¼VS 390K-K	
R38	Carbon film 39k	RF¼VS 39K-K	
R39	Carbon film 12k	RF¼VS 12K-K	
R40	Carbon film 1.3k	RF¼VS 1R3K-K	
R41	Carbon film 240	RF¼VS 240-K	
R42	Carbon film 6.8k	RF¼VS 6R8K-K	
R43	Carbon film 10	RF¼VS 10-K	
R51	Carbon film 39k	RF¼VS 39K-K	
R52	Carbon film 4.7k	RF¼VS 4R7K-K	
R53	Carbon film 22	RF¼VS 22-K	

Symbol	Description	Part No.	
R54	Carbon film 22	RF¼VS 22-K	
R61	Carbon film 150	RF¼VS 560-K	
R62	Carbon film 33 ½W	RF½PS 33-K	
R63	Metal 560 3W	R03P 560-K	
R64	Metal 160 3W	R03P 160-K	
R65	Wire wound 75 10W	C91-851-0	
R66	Wire wound 75 10W	C91-851-0	

POTENTIOMETERS

Symbol	Description	Part No.	
VR1	4.7kΩ Semi-fixed, FWD Equalizer Adj.	C92-051-0	
VR2	4.7kΩ Semi-fixed, REV Equalizer Adj.	C92-051-0	
VR3	22kΩ Semi-fixed, FWD P.B. Level Adj.	C92-857-0	
VR4	22kΩ Semi-fixed, REV P.B. Level Adj.	C92-857-0	
VR5	2.2kΩ Semi-fixed, VU Level Adj.	C92-401-0	
VR6	47kΩ Semi-fixed, REC. Level Adj.	C92-048-0	
VR7	150kΩ Semi-fixed, L ch. Bias Adj.	C92-860-0	
VR8	150kΩ Semi-fixed, R ch. Bias Adj.	C92-860-0	
VR9	100kΩ Semi-fixed, E Head Dummy Adj.	C92-047-0	
VR10	10kΩ, REC. Level Control	C81-433-B	

SWITCHES

Symbol	Description	Part No.	
S1	FWD-REV. Selector (Slide type)	S41-852-A	
S2	REC.-P.B. Selector (Slide type)	S41-852-A	
S3	Equalizer Selector	S14-401-0	
S4	REC. Mode Switch	S14-402-B	
S5	REC.-P.B. Selector	S41-855-0	

Symbol	Description	Part No.	
S6	Muting Switch	S48-856-A	
S7	Contact Point OFF Switch	S42-403-0	
S9	Plunger Switch	S48-855-0	
S10	Motor Switch	S21-851-0	
S11	Shut off Switch	S21-851-0	
S12	Power Switch	S31-851-0	

SEMICONDUCTORS

Symbol	Description	Part No.	
Q1	2SC458LG B or C Transistor		
Q2	2SC458LG B or C Transistor		
Q3	2SC458LG B or C Transistor		
Q4	2SC458 C or D Transistor		
Q5	2SC458 C or D Transistor		
Q6	2SC458 C or D Transistor		
Q7	2SC1061 B Transistor		
Q8	2SC1061 B Transistor		
D1	1N34A Diode		
D2	1N34A Diode		
D3	1S1849 Diode		
D4	1S1849 Diode		

COILS, TRANSFORMERS

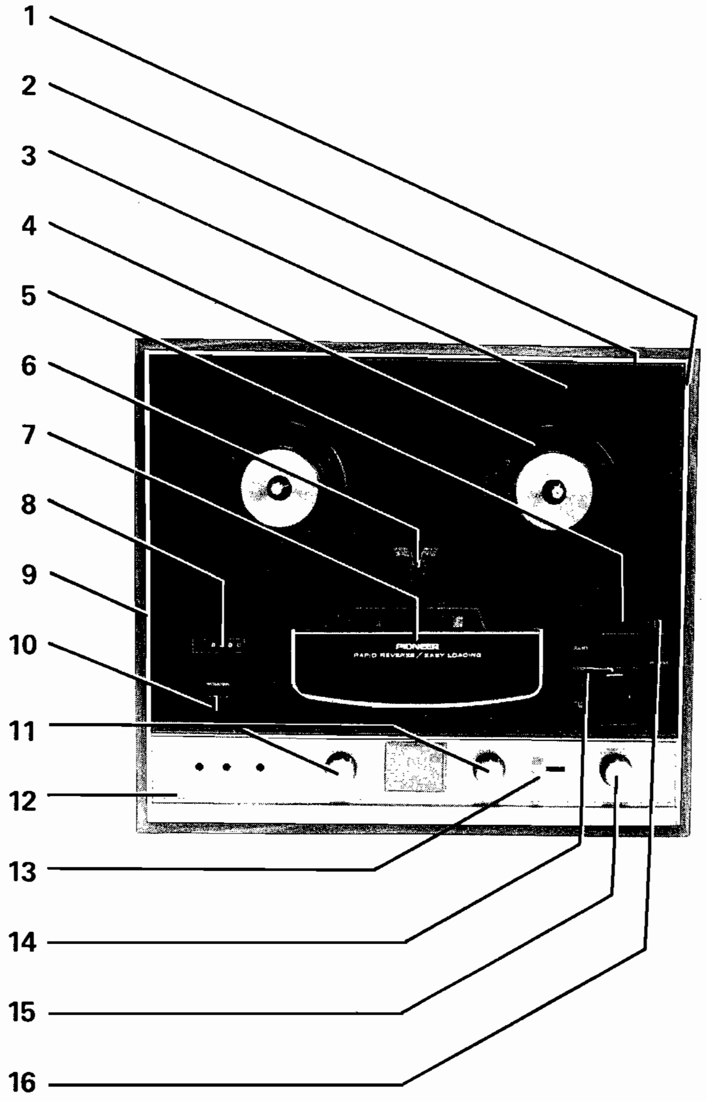
Symbol	Description	Part No.	
L2	Peaking Coil	T84-402-A	
L3	Trap Coil	T84-401-A	
L4	Dummy Coil	T84-403-A	
T1	Matching Transformer	T61-408-A	
T2	OSC Transformer	T83-403-B	
T3	Power Transformer	T52-413-A	

MISCELLANEOUS

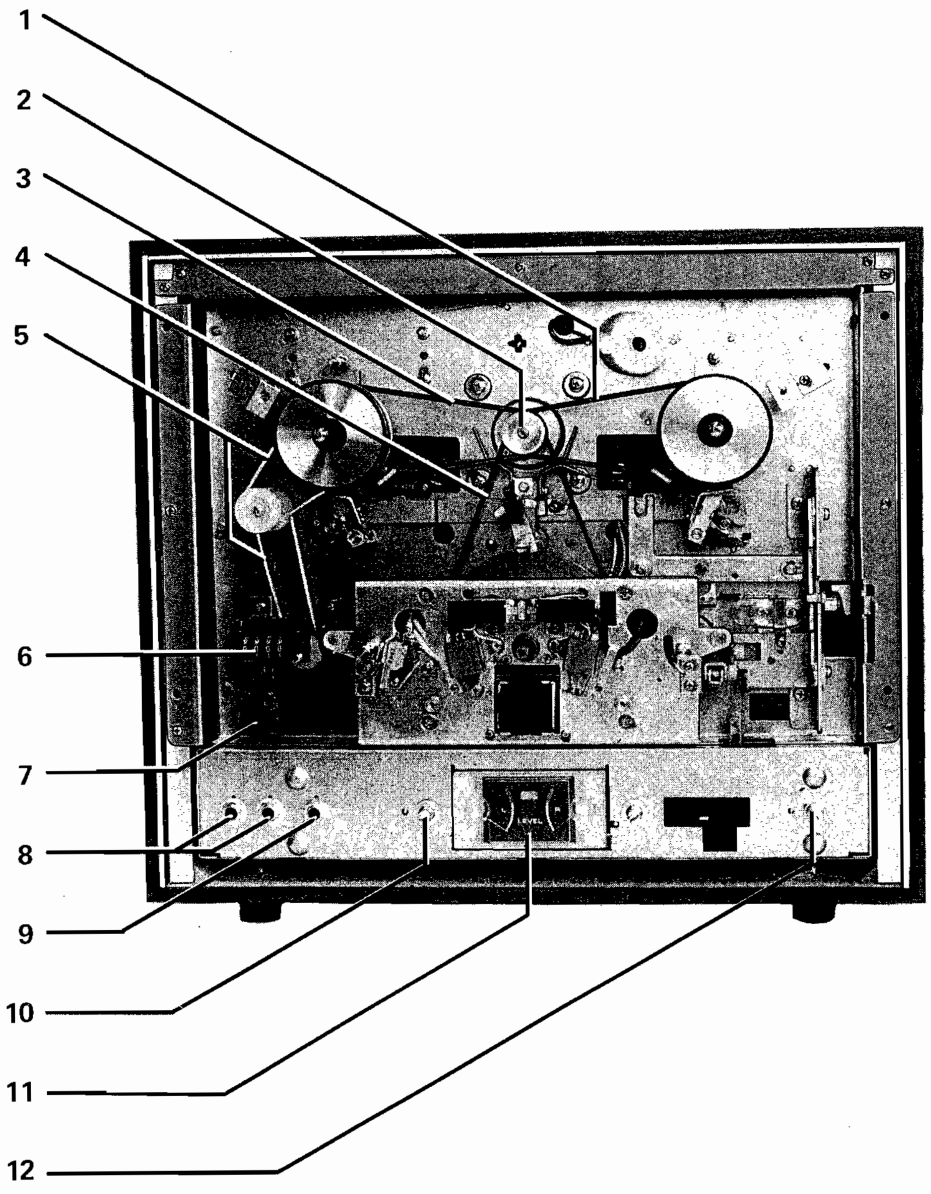
Symbol	Description	Part No.	
CR1	Spark Killer	W53-045-0	
CR2	Spark Killer	W53-045-0	
CR3	Spark Killer	W53-045-0	
CR4	Spark Killer	W53-045-0	
CR5	Spark Killer	W53-045-0	
CR6	Spark Killer	W53-045-0	
CR7	Spark Killer	W53-045-0	
RL1	Relay (12V)	S61-853-0	
	Motor	N11-852-A	
	R.P. Head	P54-851-C	
	Erase Head	P53-402-0	
	Plunger	N15-852-0	
	Level Meter	A91-404-0	
	Line Voltage Selector	S11-018-0	
	Fuse 3A	E21-006-0	
	Fuse 0.5A	E21-007-0	
	AC Power Cord	D11-003-E	
	Pilot Lamp	E22-851-0	
	Pilot Lamp Socket	K41-851-0	
	Pilot Lamp (Green)	E22-405-0	
	Pilot Lamp (Red)	E22-854-A	
	Pilot Lamp Socket	K41-851-0	
	Microphone Jack	K72-024-0	
	Headphone Jack	K72-026-0	
	REC/P.B. Connector	K93-003-B	
	Line Output/Line Input Jack	K21-010-D	

8. MECHANICAL PARTS LIST

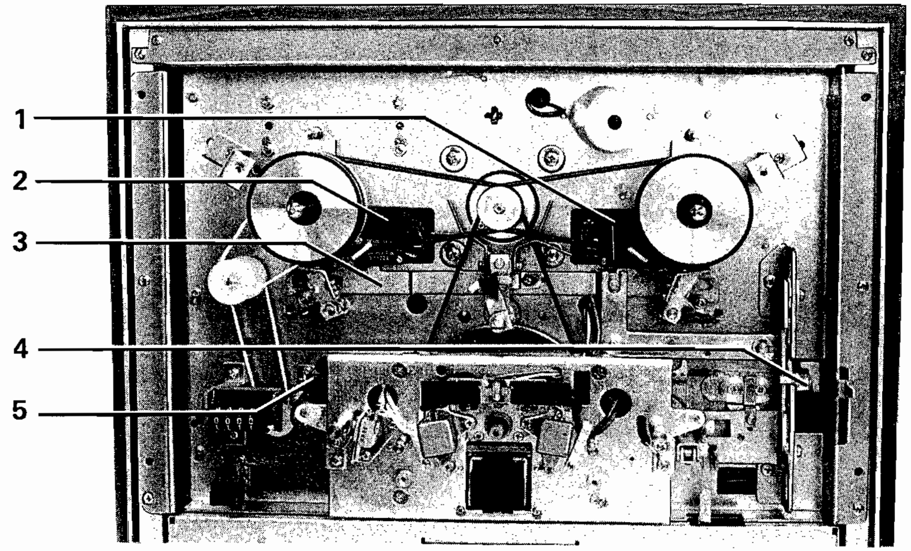
Key No.	Description	Part No.	
1	Sash (C)	A61-408-B	
2	Sash (B)	A61-407-B	
3	Panel assembly (Including Key No. 4, 5 and 8)	E17-412-0	
4	Reel base escutcheon	A66-851-0	
5	Finger rest	A66-852-A	
6	Speed selector knob	A12-406-0	
7	Head housing assembly	E17-413-0	
8	Counter escutcheon	A66-402-A	
9	Sash (A)	A61-406-B	
10	Power switch button	A17-402-0	
11	Rec. level control knob	A12-403-A	
12	Amplifier panel	A62-403-B	
13	Rec. lever knob	A18-401-0	
14	Function lever knob	A17-854-A	
15	Mode switch knob	A12-403-A	
16	Pause lever knob	A18-606-0	
	Lock spring for REC. & PAUSE levers	B32-679-0	

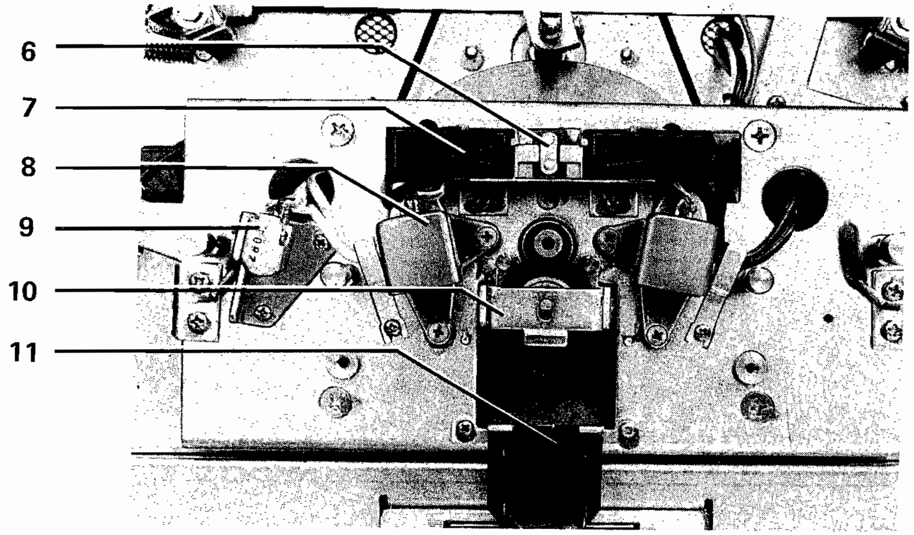


Key No.	Description	Part No.	
1	Take-up belt	N28-852-A	
2	Motor pulley 50Hz (60Hz)	W71-416-A (W71-419-A)	
3	Take-up belt	N28-852-A	
4	Drive belt	N28-851-0	
5	Counter belt	N28-853-0	
6	Tape counter	A92-401-0	
7	Power switch	S31-851-0	
8	Mic. jack	K72-024-0	
9	Headphone jack	K72-026-0	
10	Rec. level control (Potentiometer)	C81-433-0	
11	Level meter	A91-014-0	
12	Rec. mode switch	S14-402-B	



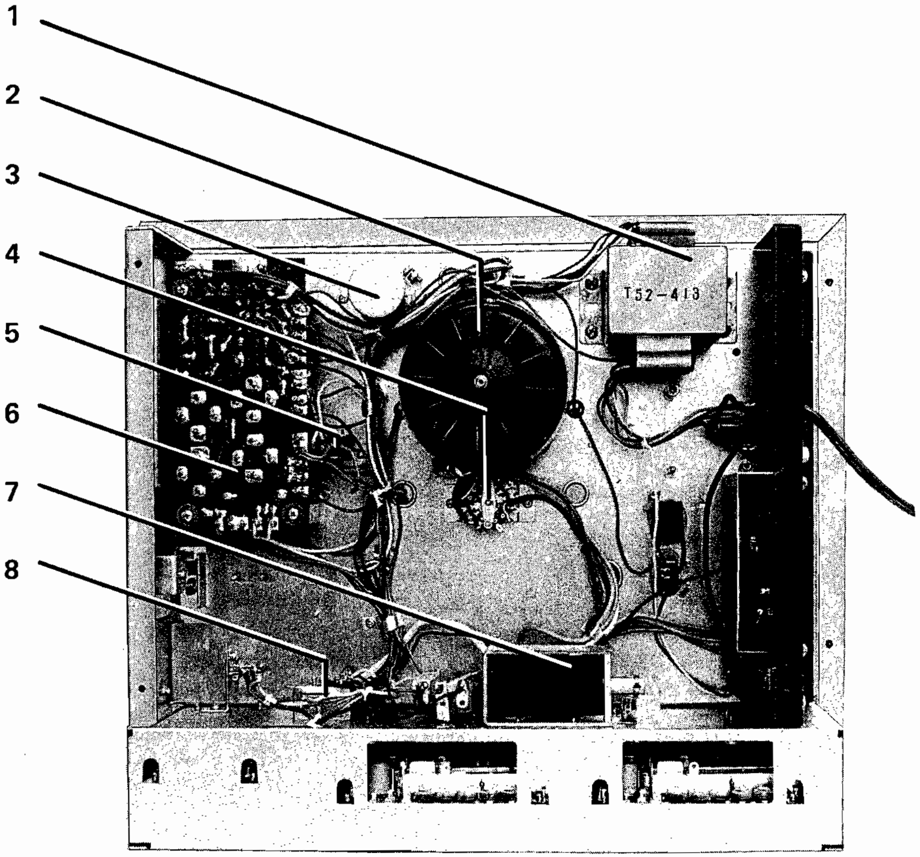
Key No.	Description	Part No.	
1	OSC. switch	S21-418-0	
2	Motor switch	S21-851-0	
3	Fast-forward cam	W72-477-0	
4	Pause lever cam	N81-404-0	
5	Shut-off switch	S21-851-0	
6	Push switch assembly	S32-401-A	
7	Push button assembly	A18-402-0	
8	R.P. head	P54-851-C	
9	E head	P53-402-O	
10	Pinch roller assembly	E17-511-0	
11	Pinch cover assembly	W72-864-0	

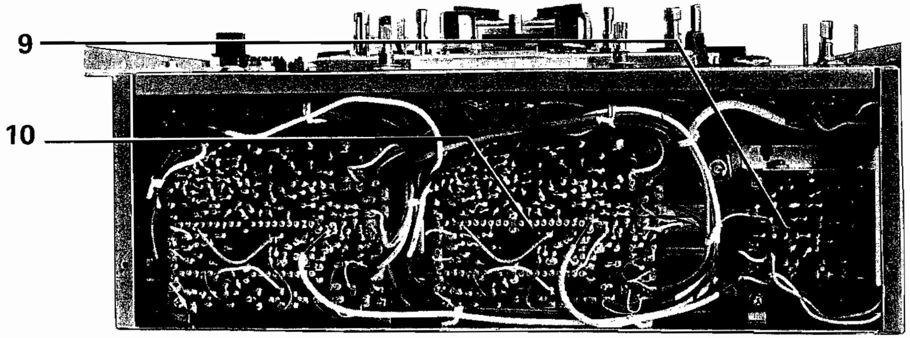


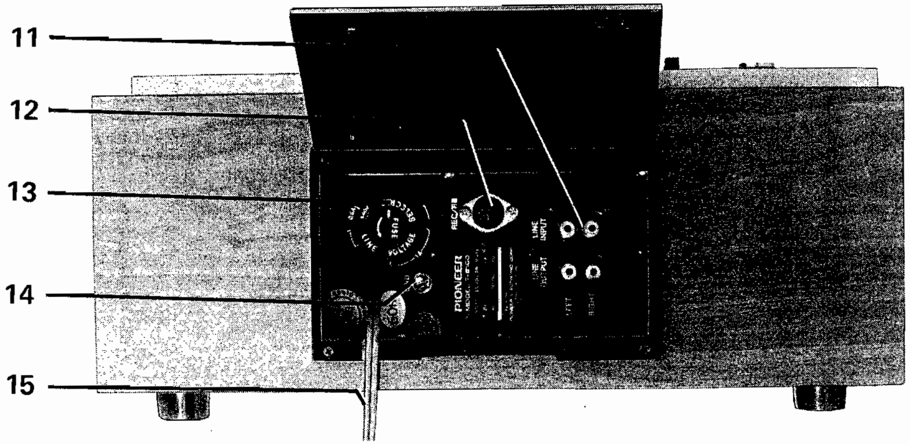


Key No.	Description	Part No.	
1	Power transformer	T52-413-A	
2	Motor	N11-852-A	
3	M.P. Capacitor	C15-852-0	
4	Speed selector switch	S14-401-0	
5	Reverse cancel switch	S42-403-0	
6	Power supply unit	W16-408-0	
7	Plunger	N15-852-0	
8	REC. switch board assembly	W18-442-0	

Key No.	Description	Part No.	
9	OSC. unit assembly	W37-401-0	
10	Amplifier board assembly	W15-419-0	
11	4P pin-jack	K21-001-D	
12	Rec./P.B. connector (DIN type)	K93-003-B	
13	Line voltage selector	S11-018-0	
14	Screw for ground terminal	B11-012-A	
15	AC power cord	D11-003-E	

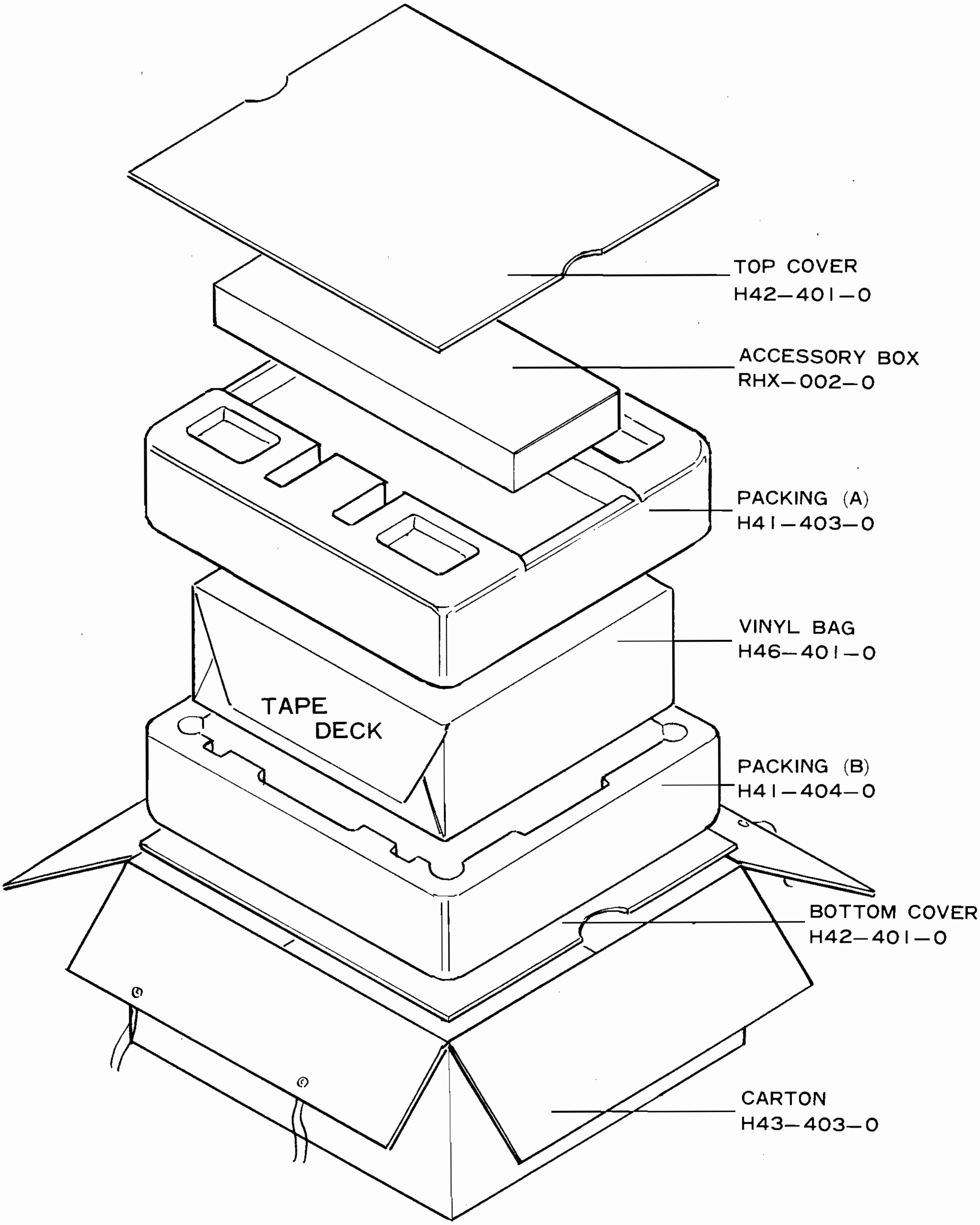

1
2
3
4
5
6
7
8
T52-413




11
12
13
14
15
PIONEER
REC/PB
LINE INPUT
LINE OUTPUT
LEFT
RIGHT
FUSE
LINE VOLTAGE SELECTOR

Symbol	Description	Part No.	
S9	Spring switch No. 5	S48-855-0	
S6	Spring switch No. 6	S48-856-0	
	Pilot lamp socket (E 5)	K41-851-0	
	Pilot lamp (E 5)	E22-851-0	
	Pilot lamp (Green)	E22-405-0	
	Pilot lamp (Red)	E22-854-0	
	Glass tube fuse 0.5A	E21-007-0	
	Glass tube fuse 1A	E21-004-0	
	Wooden case assembly	M55-401-0	
	Foot assembly	E17-414-0	
	Grommet	E31-851-0	
	Washer A for fly-wheel	E31-854-B	
	Washer B for reel base	E31-857-0	
	Washer (7 x 5.2 x 0.8)	E23-865-0	
	Washer (7 x 5.2 x 0.5)		
	Washer (6.5 x 4.2 x 0.3)		
	Washer (12 x 8.2 x 0.3)		
	Washer (10.8 x 7.5 x 0.3)		
	Washer (10 x 5.2 x 0.5)		
	Washer (8 x 5.2 x 0.2)		
	Washer (8 x 5.2 x 0.1)		
	Locking pin for plunger	B28-851-0	
	Accessory box	H46-870-0	
	Vinyl cover	H46-402-0	
	Connecting cord	D53-851-0	
	Reel cap	E31-856-0	
	Head cleaning kit	E13-852-0	
	Cleaning ribbon	E33-856-0	
	Operating instructions	R12-406-0	

9. UNPACKING AND PARTS NUMBER


TOP COVER
H42–401–0
ACCESSORY BOX
RHX–002–0
PACKING (A)
H41–403–0
VINYL BAG
H46–401–0
TAPE DECK
PACKING (B)
H41–404–0
BOTTOM COVER
H42–401–0
CARTON
H43–403–0

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